THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

Vol. X. CHICAGO, MAY 26, 1888. No. 21.

ADDRESS IN STATE MEDICINE.

Delivered at the Thirth-ninth Annual Meeting of the American Medical Association, May 10, 1888.

BY HENRY P. WALCOTT, M.D.,
OF CAMBRIDGE, MASS.

Members of the American Medical Association:

When a committee of this body invited me to deliver the address which Dr. Cabell felt himself unable to undertake, I accepted the invitation with much hesitation, well aware that, in attempting to fill the place which all had hoped to see occupied by the honored head of our first—unfortunately, perhaps our last, National health organization, I should fall far below your proper expectations.

Mingled with this natural reluctance is also the knowledge that I have not the oratorical skill to repeat in any new or attractive manner those general statements as to the claims of hygiene and State preventive medicine upon the public and our profession which have been so often and so eloquently brought to your attention.

Neither am I quite willing to limit myself to an attempt to describe the progress of public preventive medicine during the past year. But I shall assume that my text has been given me in the fact which is probably the reason for my invitation to occupy this most honorable place. I mean my connection with the State Board of Health of Massachusetts, now in the twentieth year of its existence.

This Board has passed through experiences which are more or less true of every other State Board of Health in this country—it has sometimes failed where success was due and has succeeded where defeat seemed inevitable. It has illustrated the various stages of progress in the attempt on the part of the State to prevent disease, and has also, at some periods in its history, suffered from the interference of politicians and self-seekers.

This story, interesting as it might be in Massachusetts, would be quite out of place here, were it not true that we also have a fairly kept record of our vital statistics from the year 1842 to the present time.

Therefore it has seemed to me that it would not be unprofitable, in this twentieth year of State preventive medicine, that I should attempt to answer some of the questions that may fairly be asked of those who have had a share in the public responsibility for the prevention of disease.

You will not need the assurance, I hope, that the example of my own State is used in no limited and provincial spirit. We have not hesitated to borrow from our brothers in other States and countries anything that offered the slightest promise of help in the unending struggle for the preservation of human life. We have relied upon their counsel and assistance, and have not been disappointed. On the other hand, the legislative act by which our Board was established has served as a model for many of the organizations subsequently formed. Our interests have thus been common, our methods similar, and the results will be not much unlike.

Another reason for using this local experience lies in the fact that our restricted territory and comparatively large population have brought about conditions which, fortunately for the majority of the States of the Union, will remain in the distant future, but which, sooner or later, will come to all, and almost inevitably sooner than they are expected.

That these experiences can be submitted to no tribunal so competent to correctly interpret them as the medical profession is a proposition which scarcely needs an argument.

Although State Medicine, as the name implies, is the result of legislation in which our profession has little or no share, and legislation which, oftentimes, is not immediately suggested by medical men, still it is quite true that legislative bodies have rarely, if ever, acted upon measures concerning the public health without some understanding of the views of our profession, expressed publicly in the hearings before appropriate committees of the legislative bodies, or privately in the more convincing interchanges of opinion between legislator and constituent. But while this is true in a general sense of the influence of the profession, it is not true that the best medical opinion receives the highest consideration, for it is not the loudest-voiced and it is constitutionally unwilling to enter the field of politics.

It should be, then, one of the functions of great representative assemblies of the profession, such as this is, to give voice to the deliberate opinions of those who are the only competent critics of the failures or successes of State Medicine.

In the earlier days of sanitary reform great improvements in the general health of communities were brought about by public works for the protection of water supplies and the better drainage of cities; these were carried on under the direction of eminent engineers, who received, and properly, the

praises due to their successful undertakings. But these very successes had to a certain extent misled the public, which was now inclined to believe that a water supply pure from ordinary contamination, a system of sewers that removed without offensive smells waste matters, were the beginning and end of sanitary regulation. The sanitary plumber, as he advertises himself, is another instance of the same tendency. While there is no question that something has been added to the security of human life, and much to its comfort, by the better planned and better constructed arrangements for our domestic conveniences, still it is true that the real question has been little advanced by all this—the question how the filth diseases, so-called, originate and how they are propagated. Many of them are found in connection with bad plumbing; some of them, also, where the plumbing appears to be perfect. The study of their origin and spread must remain in the hands of trained observers of the medical profession, for they alone can read the characters in which the evidence is recorded and assign to the various details their relative value. It is, therefore, essential that the relations between the health authorities, whether they exist in the form of boards or single commissioner, and the great body of the practitioners of medicine, should be founded in confidence: for without these supports no executive sanitary power can long maintain itself, however firmly intrenched behind political influence.

I do not mean to say that there will not be seasons during which legislative bodies will seem to arrogate to themselves the special knowledge which belongs to our calling; but it will be observed that this happens only in the years of comparative good health and prosperity. Let disaster come; let any one of the great pestilences invade the land, and all will be changed. Powers will be conferred upon boards of health never dreamed of by the founders of the Republic, and appropriations of money made which would, if used in season, have averted many pestilences. Our rulers allow the dykes to be broken through and the whole country to be flooded. The labor of one man might have saved the dyke if applied in season; the toil and the lives of thousands may be the penalty for the neglect.

These great epidemics of contagious disease are treated by Governments generally very much as our ancestors used their weapon-salve; the remedy was rubbed upon the weapon that inflicted the wound, and the patient was for the time an object of secondary importance.

Would it not be as unreasonable, in this day, to establish a quarantine station at the entrance of a harbor and then to abandon all sanitary work in the threatened district, and to rely for protection on that alone which never has been and never will be, in the weakness of man, a sufficient safeguard?

Before leaving this branch of the subject I wish to call your attention for a moment to the anxieties so frequently shown by our National legislators as to the unconstitutionality of the sanitary legislation which has been from time to time demanded in the interest of the public health. It *is*, I presume, true that the words "public health" do not occur in the written Constitution of the United States, and they do not appear there for the simple reason that in the year 1787 men knew very little practically about the prevention of disease, their efforts to limit epidemics consisted in brutal and irrational systems of quarantine, which did not protect; and are only now giving way to the humane and scientific methods of medical inspection, disinfection, at times detention on the frontier, and prompt isolation within the country, of those suffering from communicable diseases.

Public hygiene, which lies at the foundation of modern civilized life, is, almost literally a creation of the present day. In earlier times under the scourge of some startling inroad of disease, States and smaller communities had made occasional and spasmodic attempts to repress great epidemics—but a belief in the prevention of disease, as we understand these words, did not exist; and it is within the active life of men now living that this important branch of medicine has received its proper consideration. One of the first among the medical teachers of this country to direct attention to preventive medicine was Dr. Elisha Bartlett, sometime Professor of the Theory and Practice of Medicine in the Transylvania School of Medicine, in Kentucky, a man who exercised by his teachings and writings a great and sound influence throughout the country. In his essay on the Philosophy of Medical Science, published in 1844, he claims that the great work of the next and succeeding generations will be the best methods of preventing as well as curing disease.

The words of that great physician Dr. Samuel D. Gross, himself known and honored wherever the science or the art of surgery is recognized, shows how fully this prediction has been realized. It seems to me singularly appropriate that the words should have been spoken upon the occasion of the dedication of a monument to the memory of Ephraim McDowell, who gave to the world that surgical operation which in the cure of disease has given more years to woman's life than any other.

"The great question of the day is not this operation or that; not ovariotomy or lithotomy, or a hip-joint amputation, which have reflected so much glory upon American medicine, but *preventive medicine*, the hygiene of our persons, our dwellings, our streets, in a word, our surroundings, whatever and wherever they may be, whether in city, town, hamlet or country. This is the great problem of the day, the question which you, as the representatives of the rising generation of physicians, should urge in season and out of season, upon the attention of your fellow-citizens—the question which above and beyond all others should engage your most serious thoughts and elicit your most earnest coöperation."

Many of our law-makers have discovered, I believe, no other authority for sanitary legislation on the part of the General Government than that which is contained in the section of the Constitution which declares that Congress, among other functions, shall have power "to regulate commerce." There does not appear to be any clearly expressed provision in the above-named document for the appropriation of

money to help exterminate contagious pleuro-pneumonia in cattle, and yet the forty-ninth Congress did appropriate $500,000 for that purpose, and wisely, I am sure we shall all say. I read, however, in this same section of the Constitution that Congress shall also have power to provide "for the general welfare of the United States."

In our own day we have seen National, State and local laws swept away by cholera and yellow fever. Let us hope then that some ingenious law-maker may find in these words a sufficient authority for the expenditure of enough of the public money, at least, to secure some of those thorough investigations of preventable disease which have characterized the work of the Gesundheitsamt in Germany and the Local Government Board in England.

When it can be deliberately stated—as I believe the experience of the last ten years makes it possible for us to state—that improved methods of research, that the knowledge already gained, have made it almost certain that coördinated investigations properly encouraged and supported by such aid as only a great government can give, would lead to the discovery of the causes of yellow fever and malarial fever in the first place, and in the second, to rational methods of dealing with these most formidable scourges of the land in the way of prevention or of cure. Then, I say, it does seem in the highest degree absurd, that any form of government should deliberately deprive itself of the sanitary gains which contribute so directly to the preservation of "life, liberty and the pursuit of happiness."

The State Board of Health, of Massachusetts, was established by legislative action in 1869. Local boards of health, of not much efficiency, had existed from the beginning of the century. The State Board of Health entered at once upon its duties, which were advisory rather than executive. Under the lead of wise men the public intelligence was quickened upon all the important sanitary questions to such a degree that the succeeding years brought to the Board added executive power and larger appropriations. Seven thousand five hundred dollars were appropriated for the work of the Board in the earlier years; in the present year sixty thousand dollars are the conclusive evidence of the people's belief in the value of protective medicine, and this sum does not include the large sum spent upon the registration report.

After ten years of most successful administration it was thought advisable by the legislature of the day to very widely extend the functions of the Board by reorganization and the addition of the power of Commissioners in Lunacy and of the Supervision of the Public Charities. The burden proved too great and after a few years the original organization was restored with enlarged powers.

The right of the people to pure air, soil, water and food are recognized by the laws of the Commonwealth, and various statutes have been passed to secure these results and to prevent their infringement. The Board is charged to some extent with the duty of enforcing these rights and preventing and punishing any violation of them; having for this purpose power coördinate with that of the local boards of health.

The business of investigating and gathering information as to any matter pertaining to the public health, and of diffusing such information among the people, is also included in its functions.

Among the matters of which it thus takes cognizance are the causes and prevention of infectious diseases. For this purpose coördinate powers with local boards of health are given to the Board; the suppression of nuisances, including the regulation of noxious and offensive trades; the collection and diffusion of information relative to industrial hygiene, or the effects of different occupations, industries and domestic pursuits upon people at various ages and under various conditions of life; the hygiene of schools, school buildings and public institutions; the examination and investigation of public water supplies and public ice supplies, and the prevention of their pollution; the investigation of drainage and sewerage plans or systems so far as they relate to the public health; the disposal and transportation of the dead; the inspection of food, drugs, and other articles affecting the public health; inquiries relative to the amount of intemperance from the use of stimulants and narcotics, and the remedies therefor; investigations as to the infectious diseases of animals so far as they affect man; the editing of the registration report of the State.

What effect has all this had upon the health of the people as shown by the mortality rate; for that is the only trustworthy standard, under our present means of registration, by which to determine the effects of measures taken for the prevention of disease. Without the assistance of well conceived and carefully executed tables of vital statistics, communities are liable to the most erroneous impressions as to the actual effect of their surroundings upon the general health. Hence, our legislation in sanitary matters is in constant danger of becoming the reflex merely of vague rumors, hasty and incorrectly formed conclusions, or statements based solely on commercial and interested motives, unless it is distinctly understood that the duration of human life, the diseases by which it is cut short. and the preventable or inevitable character of the disease, so far as we now understand these qualities, are things which can be determined by intelligent and continuous investigation by experts, and should be no more the subject of guess-work than the truths of mathematics or the facts of chemistry.

Inasmuch as the task which I have taken upon myself is the proof of the value of preventive medicine, let us take not the mortality rate as a whole, but the rates from certain specified diseases which are admitted to be preventable and controllable by means of vaccination, isolation and disinfection, and suitable sanitary precautions.

Let us then compare these rates in successive years not only with each other, but also with the rates of those diseases in respect to which we possess no well recognized powers of prevention.

This comparison shall be made during the period of the existence of our State Board of Health; not with the presumption that statute regulation, either

in the hands of a State or municipal board of health, deserves all the credit of the improvement obtained.

During this period there has been an active and intelligent interest in all sanitary questions, steps have been taken on all sides for procuring purer water supplies, better drainage, food and drugs free from adulteration; tenement houses have been much improved, sometimes by private undertaking, and oftentimes under the compulsion of the law. But in all these movements the influence of the sanitarian has been predominant, and the improvement in the health of the people is regarded as the only just standard for the measure of our success.

When regard is had to the fact that Massachusetts is one of the oldest settlements in the country and, with the exception of Rhode Island, the most densely populated State in the Union, it would not be surprising to find there a relatively high death-rate. This would be true even if the conditions which favor health there were equal to those found in other States.

The average death-rate for the thirty-six years 1851–1886 was 19.40 per 1,000 living; the lowest death-rate in this period was 16.99, in the year 1867; the highest death-rate that of 1872, being 22.85 per 1,000. It was 18.38 per 1,000 in 1869, and 18.85 in the last registration year, 1886. So far as these figures go, we have no changes of consequence.

But if we turn to the general classification of causes of disease into zymotic, constitutional, local, develmental and violent, we find that there has been an almost constant decrease in the class of zymotic diseases during the period now under consideration.

PERCENTAGE OF CAUSES OF DEATHS BY CLASSES.

YEARS.	CLASSES.				
	Zymotic.	Constitutional.	Local.	Developmental.	Violent Deaths.
1870	25.6	26.6	28.1	15.6	4.1
1875	28.6	24.3	31.8	11.2	4.1
1880	24.5	23.7	38.0	10.1	3.7
1885	19.0	23.7	42.7	10.7	3.9

The years taken are census years.

The changes in the class of *constitutional* diseases have not been so marked as in those of the zymotic class, although the tendency appears to be constant in the direction of a decrease.

In the class of local diseases there has been a decided increase, from 28.1 in 1870 to 42.7 in 1885.

In the class of deaths from developmental causes the changes in the last three census years are insignificant. As this class contains deaths from teething and old age, it is to be expected that more accurate diagnosis will diminish its relative importance.

The percentage of violent deaths remains throughout essentially unchanged.

If we arrange the percentages of causes of death from zymotic diseases in two columns of ten years each, we shall find in the first decade, from 1867 to 1876, the average of these percentages to be 27.94; in the second decade, 1877–1886, the average has fallen to 22.4.

Let us examine more carefully the diseases which we have a reasonable hope of preventing by appropriate sanitary regulations:

We shall find at the head of the list a disease which we can with certainty limit, if not abolish. As we pass down the list we shall come to diseases which are more and more dependent upon the special treatment of a physician or surgeon, and can be but slightly, if at all, affected by the surroundings which the public officer of health can control.

It seems, however, to be true that, with each succeeding year, a larger and larger number of these are found to be the result of influences that can be removed.

For the first time in the registration history of the State a year has passed—1886—without the record of a single death from smallpox, and this notwithstanding the fact that we are in continual communication with countries where the protection of vaccination is not so generally given as it should be, and one of our chief industries, the manufacture of paper, involves the use of materials which always carry with them the possibility of the presence of the contagion of this most persistent disease. Many years of comparative immunity from smallpox had led to a disregard of the stringent laws for compulsory vaccination, and the State paid the usual penalty in 1872 and 1873, the mortality in the former of these years reaching 2.9 per cent. of the deaths from all causes, with 1029 deaths from smallpox. The attention of the authorities was aroused, existing legislation was rigidly enforced, and additional powers, where found necessary, were obtained, and there has been no year since when the percentage of deaths from this cause to deaths from all causes has reached fourteen hundredths (.14) of one per cent.

Typhoid fever has, upon the whole, diminished both relatively and absolutely. In 1886 the percentage of deaths from typhoid fever to deaths from all causes was 2.15; in the year of greatest prevalence, within a period of twenty years—1872—the percentage of deaths from typhoid to deaths from all causes was 4.86, and the death-rate per 10,000 living was 11.1. The diminution in the death-rate from this disease has been especially marked in cities with new water supplies and good systems of sewers. The death-rate from this cause is substantially unchanged in the small country towns.

The death-rates from typhoid fever per 10,000 living, in census years 1865–1885 have been for the State: 1865, 13.4; 1870, 9.1; 1875, 6.4; 1880, 4.9; 1885, 3.9.

Scarlet fever has more than once astonished the medical world by a sudden assumption of great violence and fatality after many years of comparatively harmless prevalence. Graves has called the attention of the profession in a most instructive manner to the experience of Dublin, where from 1804, when an epidemic of great malignancy had come to an end, until 1834, the scarlet fever that occurred was very mild. At the latter date the disease burst in upon the city with its old-time ferocity. It is therefore with some hesitation that I use the figures of the registration as to this disease. The record for thirty years shows a death-rate per 10,000 living re-

duced from 17.2 in 1857, to 1.7 in 1886. Though it is possible that we are only nearing the end of a series of benignant years, and that another may see the return of an epidemic over which we possess little power. Still it is the belief of our most competent observers, that isolation and disinfection have had a sensible effect upon the spread of this disease.

Diphtheria first appeared in our registration in 1858, causing in that year eighteen deaths; reached its highest degree of prevalence in 1877, and since that year has much diminished in frequency, but has not again sunk to the low figures of the years 1870–1873, when it constituted less than 1 per cent. of the deaths from all causes.

If in the present uncertainty of medical diagnosis with reference to croup and diphtheria, it is desirable to consider them together, and all deaths from croup are added to those resulting from diphtheria, we should not obtain conclusions essentially different from those above stated. An examination of our record shows that the reported deaths from croup are slowly and steadily falling in number, and that the two diseases rise and fall together in the scale of prevalence. It is probable, therefore, that a more accurate diagnosis will hereafter transfer to deaths from diphtheria many cases which would, in times past, have been assigned to croup.

The relations of diphtheria to the grosser forms of insanitary conditions, is not yet clearly made out. There is also a probability that some of the lower animals are attacked by it.

The degree of its prevalence in Massachusetts in the United States census year 1880, was almost identical with the rate for the whole country. The general rate was 5039 out of 100,000 deaths from all causes; the rate in Massachusetts was 5010 to the 100,000. In England in 1880 the rate was only 532 per 100,000, which does not vary essentially from the rate of the ten years preceding.

In the city of Boston a notification to the board of health of all cases of diphtheria, as well as of certain other communicable diseases, is compulsory. The board in such cases causes a careful inspection of the premises to be made. In the year 1887, when 1049 cases, with 316 deaths, were reported, 927 houses were examined; 534 were found to be in defective sanitary condition; 393, on the contrary, were in good sanitary condition.

A rigid inspection of 900 houses taken at random in any city would, I think, not be unlikely to show nearly as large a number of houses that would fail to satisfy an examination which is very apt to start out with the determination to find some sanitary defect.

It is a communicable disease in a very marked degree, but does not appear to have any other relation to filth than this, that the absence of proper cleanliness, and the presence of the material of contagion in the food, person or surroundings, are quite sure to go together. It may also be assumed to be probable that a number of mild cases of the disease always exist, and are the unsuspected vehicles of the contagion. We know this to be true of almost all the diseases of this class, and I think we have hitherto taken the probable existence of such cases too little into account.

The diarrhœal diseases, including diarrhœa, dysentery, cholera infantum, cholera morbus, and enteritis, have only changed place in the list as cholera infantum has varied. Cholera infantum, during the period of twenty years, has diminished, though the fall has not been regular; dividing the period of twenty years into two decades, the average of the first yields a death-rate from cholera infantum of 13.51 per 10,000 living; the second an average of 10.32 per 10,000.

Dysentery, which in the first half of this century has several times appeared in epidemics of great severity, has thus far in the second half been steadily diminishing in importance. The improvements in domestic water supplies appear to have had some influence upon this reduction in number, so far at least as the question has been studied in certain cities in the State. Only 243 deaths out of a total of 37,244 are assigned to this disease in 1886.

Malarial fevers caused, in 1886, 32 deaths, of which number 20, or 62.5 per cent., occurred in the five western counties, which have but 26 per cent. of the population. Although serious epidemics have occurred in the eastern counties during the years 1884–5–6, they have thus far had little apparent effect upon the death-rate. Statistics of disease as well as those of mortality would be an additional index of very great value for the sanitary condition of a district. In the case of the disease now under consideration, they would be of unusual value, because portions of our State hitherto exempt have been invaded by malarial fevers, and yet the resulting mortality has been insignificant. We can only say that malarial fevers have increased beyond the increase in our population, and that this tender exotic in New England has unfortunately found some new conditions which favor its development.

The number of deaths from measles has been very variable through this period; this variability in mortality was more noticeable in the last half than in the first half of the period. The average of the last half was also less than in the first half. The number of deaths has ranged from a minimum of 19 deaths in 1879, to 428 in 1872.

MORTALITY FROM PULMONARY CONSUMPTION, BY DECADES, 20 YEARS.

YEARS.	Deaths.	Death-rates per 10,000 of Population.	YEARS.	Deaths.	Death-rates per 10,000 of Population.
1867.....	4,362	32.5	1877.....	5,457	32.9
1868.....	4,437	32.2	1878.....	5,334	32.0
1869.....	4,659	32.8	1879.....	5,223	30.4
1870.....	5,003	34.3	1880.....	5,494	30.8
1871.....	5,070	33.9	1881.....	5,886	32.4
1872.....	5,556	36.2	1882.....	5,865	31.7
1873.....	5,556	35.3	1883.....	5,931	31.5
1874.....	5,284	32.8	1884.....	5,798	30.3
1875.....	5,738	34.7	1885.....	5,955	30.5
1876.....	5,327	32.2	1886.....	5,897	29.8
Average..	5,099	33.7	Average..	5,684	31.2

The number of deaths reported as due to consumption in 1886 was 5897. The percentage of deaths from this disease to deaths from all diseases

was 15.83. Arranging the deaths from consumption in two periods, 1867–1876 and 1877–1886, the average of the second decade is found to be 2.5 per 10,000 persons living less than that of the first decade; that is to say, from 33.7 to 31.2. There has thus been an actual decrease in this disease, and more marked in the second decade than in the first.

Our registration report in its present form gives us no satisfactory answer to one of the most important questions that arises in the consideration of this disease. How often and under what conditions is the predisposition to consumption hereditary? It is, in the very nature of our life, unavoidable that every individual must at many times be exposed to the contagion of tuberculosis, and yet it is within every physician's experience that many members of families with very distinct histories of consumption in more than one generation, do escape.

One of the most important and widely spread influences upon the origin and extension of consumption was announced by an honored President of this Association, also the father of State Medicine in Massachusetts—Dr. H. I. Bowditch—fortunately still living in vigorous old age, who, by his announcement and proof of the law of soil moisture and land drainage in their influence upon consumption, has turned the attention of the world to conditions which can be controlled.

Pneumonia has generally held the second place on our mortality lists, and has not diminished in relative frequency in recent years.

The total number of deaths reported as due to cancer in 1886 was 1104; the ratio of fatal cases among females to the whole number has increased as follows: 1881, 64.4; 1882, 64.9; 1883, 67.6; 1884, 66.6; 1885, 68.8; 1886, 69.7. If the statistics relative to cancer during twenty years are divided into two ten-year periods, with death-rates per 10,000 living, we shall find that there has been an increase with a certain degree of uniformity from 2.9 per 10,000, in 1867, to 5.6 in 1886, nearly double.

MORTALITY FROM CANCER, BY DECADES, 20 YEARS.

YEARS.	Deaths.	Death-rates per 10,000 of Population.	YEARS.	Deaths.	Death-rates per 10,000 of Population.
1867.....	395	2.9	1877.....	646	3.9
1868.....	445	3.2	1878.....	807	4.8
1869.....	492	3 4	1879.....	862	5.2
1870.....	516	3.5	1880.....	928	5.6
1871.....	551	3.3	1881.....	949	5.2
1872.....	542	3.2	1882.....	987	5.3
1873.....	611	3.6	1883.....	1,026	5.4
1874.....	585	3.5	1884.....	1,060	5.5
1875.....	593	3.5	1885.....	1,087	5 6
1876.....	657	3.9	1886.....	1,104	5.6
Average..	539	3.6	Average..	946	5.2

In England and Wales very much the same increase has been noted; the proportion of deaths from cancer has increased regularly from 2.7 per 10,000 in 1847, to 5.3 per 10,000 in 1882.

The number of deaths from the group of diseases attributed to the brain was 3844, which, though a little less than in 1885, was still larger than that of any other previous year.

The mortality-rates per 10,000 in the census years 1860, '65, '70, '75, '80, '85, were successively 12.06, 14.39, 14.35, 16.42, 17.0, and 20.01.

DEATH-RATES FROM BRAIN DISEASES IN CENSUS YEARS, AND DEATHS IN 1886.

	Death-Rates.					
	1860.	1865.	1870.	1875.	1880.	1885.
Mortality rates per 10,000, from						
Apoplexy.....	1.93	2.08	2.70	2.78	4.19	5.12
Softening of the Brain.....	.36	.33	.58	.59	.68	.65
Paralysis.....	3.26	3.78	4.32	5.43	5.23	5.82
Insanity.....	.58	.59	.71	.71	.71	.96
Cephalitis & Brain Disorders	5.93	7.61	6.04	6.91	6.19	7.46
Totals.....	12.06	14.39	14.35	16.42	17.00	20.01

Deaths from alcoholism appear to have diminished in number, but it is confessed that the death-rate ascribed to intemperance directly is but an imperfect measure of the evils resulting from an excessive use of alcohol. Neither do the figures of the report convey any just idea of the actual or relative prevalence of the venereal diseases.

The fact that Bright's classical description of the diseased processes in the kidney known by his name, was first published in 1837, and the slow progress made in the accurate medical diagnosis of these diseases during the half century, would lead us to expect in the diseases of the kidney an apparent marked increase from year to year.

It has been assumed also that the conditions of modern life have brought about a large actual increase, either from irregular and luxurious living, or improper indulgences in food and drink. It has been claimed by some that the substances now frequently added to standard articles of food and drink for the purpose of adding to their keeping qualities, or of fraudulently adulterating them, have an injurious effect upon these organs.

The difficulties of answering these questions are much enhanced by the fact that in the early years of our legislation, when the real nature of diseases of the kidney was but imperfectly understood, very many of the deaths really due to this class were registered under the head of dropsy. Another large class would appear as diseases of uncertain seat, and diseases "not specified."

With these facts in mind, let us tabulate the deaths from Bright's disease and other diseases of the kidney in one column, and the deaths from dropsy in a parallel column.

From an examination of the registration report of 1850, it appears that out of 16,606 deaths there were 18 under the heading of Bright's disease, a ratio of 1.1 to total mortality per 1000; from dropsy 416 deaths were recorded, a ratio to total mortality per 1000 of 25. In the years following the number of deaths in the first class has rapidly and steadily grown, reaching in 1886 a total of 1135 deaths, a ratio to total mortality per 1000 of 30.5; while the deaths from dropsy have as steadily and almost as rapidly decreased from a ratio of 25 per 1000 to 5.9 per 1000. If we now add the deaths from kidney

diseases to the deaths from dropsy, we obtain a ratio to total mortality per 1000, beginning in 1850 with 26.1, and ending with 36.4 in 1886.

MORTALITY FROM BRIGHT'S DISEASE, NEPHRITIS AND OTHER KIDNEY DISEASES, AND FROM DROPSY, AND RATIOS TO TOTAL MORTALITY.

YEAR.	Total Mortality.	Deaths from Bright's Disease, Nephritis and other Kidney Diseases.	Ratio to Total Mortality per 1,000.	Deaths from Dropsy.	Ratio to Total Mortality per 1,000	Totals.	Ratio to Total Mortality per 1,000.
1850..	16,606	18	1.1	416	25.0	434	26.1
1851..	18,934	27	1.4	390	20.6	417	22.0
1852..	18,482	32	1.7	418	22.6	450	24.3
1853..	20,301	35	1.7	465	22.9	500	24.6
1854..	21,414	38	1.8	474	22.1	512	23 9
1855..	20,798	56	2.7	501	24.1	557	26.8
1856..	20,734	51	2.5	487	23.4	538	25.9
1857..	21,280	45	2.1	512	24.1	557	26.2
1858..	20,776	42	2.0	481	23.2	523	25.2
1859..	20,976	56	2.7	522	24.9	578	27.6
1860..	23,068	67	2.9	470	20.4	537	23.3
1861..	24,085	91	3.7	440	18.3	531	22.0
1862..	22,974	96	4.2	467	20.3	563	24.5
1863..	27,751	111	4.0	533	19.2	644	23.2
1864..	28,723	130	4.5	502	17.5	632	22.0
1865..	26,152	173	6.6	492	18.8	665	25.4
1866..	23,637	135	5.7	462	19.5	597	25.2
1867..	22,772	161	7.1	421	18.5	582	25.6
1868..	25,603	206	8.0	470	18.4	676	26.4
1869..	26,054	239	9.2	458	17.6	697	26.8
1870..	27,329	286	10.5	491	17.9	777	28.4
1871..	27,943	370	13.2	527	18.9	897	32.1
1872..	35,019	376	10.7	618	17.6	994	28.3
1873..	33,912	460	13.5	545	16.1	1,005	29.6
1874..	31,887	463	14 5	469	14.7	932	29.2
1875..	34,978	509	14.5	474	13.6	983	28.1
1876..	33,186	488	14 7	445	13.4	933	28.1
1877..	31,342	535	17.1	412	13.1	947	30.2
1878..	31,303	615	19.6	370	11.8	985	31.4
1879..	31,801	693	21.8	380	11.9	1,073	33.7
1880..	35.292	698	19.7	271	7.7	969	27.4
1881..	36,458	825	22.6	292	8.0	1,117	30.6
1882..	36,785	877	23.8	313	8.5	1,190	32.3
1883..	37.748	959	25 4	296	7.8	1,255	33.2
1884..	36.990	1,000	27.0	234	6.3	1,234	33.3
1885..	38,094	1,088	28.6	244	6.4	1,332	35.0
1886..	37.244	1,135	30.5	219	5.9	1,354	36.4

An increase startling enough to attract attention and require investigation, but still not of the alarming character attached to the apparently overwhelming increase of Bright's disease and the kindred affections.

We have no evidence in Massachusetts that any of the substances as used for the preservation or adulteration of food have a marked injurious effect upon the kidneys.

Another lesson may be extracted from these figures. It is this: that statistical nosologies, as well as laws for the protection of public health, are educational and founded upon the learning of experts, and will inevitably break down if they get too far in advance of the common knowledge.

The figures also show that, in a sufficiently extended series of years, an explanation of an apparent discrepancy may sometimes be discovered.

This hurried glance at the registration tables will have shown this, I think: that in all the preventable diseases there has been a steady reduction, most marked in the case of small-pox—a disease that can only seriously affect a community through inexcusable neglect.

I will not weary the ears of this assembly by dilating upon a topic on which all health authorities are agreed: the necessity for compulsory vaccination and revaccination so long as the system is susceptible of the virus.

A single comparison will demonstrate the saving of life in consequence of better sanitary conditions established by the authority of a board of health.

Probably no single instance of surgical interference in a disease inevitably leading to early death has attracted more attention, has deserved more admiration, or has added so many years to human life as the operation of ovariotomy.

The largest number of deaths in any one year in Massachusetts from ovarian dropsy was 51. We will assume that all of these lives might have been saved by ovariotomy.

Let me take now the city of Somerville, a suburb of Boston, with 29 971 inhabitants by census of 1885, with natural conditions of soil of varied character—partly favorable, partly unfavorable; with a mixed population almost wholly occupied with business, the trades and day labor. It has had an energetic and intelligent Board of Health, who have used the large powers conferred by our statutes wisely. They have a system of compulsory notification of the communicable diseases, rigidly enforced; they practice, so far as possible, isolation and disinfection. During their active administration and almost wholly in consequence of it, as I believe, the death-rate of the city has been reduced as follows: The Board of Health entered upon its work in 1878.

In 1875, a census year, the death-rate was 22.86; in 1880, 17.1; in 1885, also a census year, 16.68.

The improvements are more marked even when certain districts of the city are separately examined.

But this examination is scarcely necessary to prove that the interference of a public health authority, by such sanitary regulations as we can now enforce, has saved more lives in a community of 30,000 people, in a single year, than could have been restored to health, in this same period, in a State of nearly 2,000,000 persons, by an operation justly regarded as one of the greatest triumphs of surgery.

It may be objected that, with all this apparent diminution in the mortality from selected diseases, there has still been no reduction in the general death-rate; so far, at least, as the figures of the report are to be taken as evidence.

It is unfortunately true that our reports, in the earlier years, had a less degree of accuracy than they now have; that deaths were not so generally reported then as now. The records of the year 1855 were carefully examined for the purpose of determining the completeness of the enumeration of the deaths in that year. It was estimated by a competent authority, as the result of the examination, that not far from 16 per cent. of the deaths in that year escaped registration.

It is now believed confidently that this deficiency does not exceed 2 per cent., and the registration by

means of burial permits has been made much more certain.

Apart from fluctuations in the returns of deaths to the registration offices, there are reasons for believing that some of the conditions are not now so favorable to health as they have been. The proportion of the population engaged in factories has steadily and rapidly increased. Larger numbers of the people, absolutely and relatively, live in cities, subject to the unsanitary influences that prevail there.

In 1875, 63 per cent. of the inhabitants of the State lived in cities and towns of more than 5,000 inhabitants. In 1885 the proportion had risen to 73 per cent. There has also been a large addition to the native and therefore hardier population, of immigrants from foreign countries, whose adaptability to our climate and conditions of life is still uncertain.

Too great expectations seem to have been raised, also, by the very brilliant results of sanitary works in the older countries. Men had to deal there with all the evils incident to sanitary neglect that had lasted for centuries, and in great cities at that. Here, on the other hand, the cities have contained a relatively smaller part of the population, and there has not been the same opportunity given for obtaining a result so striking as the reduction in the death-rate of London, for instance, from the high figures at the beginning of the century to those of to-day when she is the healthiest very large city in the world.

It may be of interest, in this connection, to call your attention to some of the diseases which have attracted general attention, perhaps excited more interest in the public than all other causes of death combined.

In forty-five years and eight months ending December 31, 1886, there appear to have been registered 1,163,571 deaths.

Small-pox has killed 5,572 in this period and has given rise to more legislation than any other single disease, and is the one most easily controlled. One provision of law is the beginning and end of its regulation—and that is compulsory vaccination and revaccination.

Scarlatina has destroyed 37,666 lives, permanently impaired the value of a large but unknown number, and the attempt to prevent it by sanitary regulation belongs to recent years.

Typhoid fever has been fatal to 45,871 human beings, generally in the prime of life. With an origin almost always in fæcal pollution, it becomes epidemic whenever that pollution reaches a water supply or food, especially milk. The general conditions which sustain this disease in its endemic form and favor its epidemic spread are the same which produce general unhealthiness.

It has been well said that an epidemic of typhoid fever is a sanitary crime and should be punished as such. But the peculiar history of this disease has had but little influence on legislation in this country.

Epidemic cholera, the most persuasive apostle of sanitation that has been permitted to land on these shores, has destroyed from 1832 to this year not more than 2,000 lives. In no one year, excepting 1849, the year of greatest prevalence, has it proved so fatal as scarlet fever, croup, typhoid fever, dysentery, pneumonia, whooping-cough, cancer or apoplexy; and even in 1849 the deaths from cholera did not vary much from the quarter part only of those from consumption.

Hydrophobia is represented by 72 deaths. More than half of these occurred in the four years 1876–79. There has been no death from it since 1881.

Thirteen deaths from yellow fever have not been considered of enough consequence to be given a place in the general summary. They occurred at the quarantine station in Boston and did not, perhaps, recall to any public health officer's mind the fact that about the beginning of this century yellow fever had in more than one year been a pestilence in the city itself.

Our experience in State preventive medicine has proved this: that while great good can be done to any community by the establishment of a board of health, whose functions are largely those of instruction and advice, it is certain that, sooner or later, the people will place in the hands of those capable of exercising such powers the machinery for making that advice effectual. And this has happened with regard to every subject which has been successively made an object of inquiry. There is now ample authority for the control of public water supplies and systems of sewerage; sufficient legislation to punish and prevent the adulteration of food and drugs.

One of the most encouraging signs is the more intelligent view taken by the public of the questions to which self-interest seeks to attach a sanitary significance.

Perhaps the much-vexed question of oleomargarine may be taken as an instance of this. We have in this substance a legitimate commercial product which, when properly manufactured, is a safe and useful addition to our food supply. It can be so made and is so made. When sold as natural butter it becomes an impudent fraud and should be punished as such. But it is no more a matter of concern to sanitarians than the proper making of butter itself is, and some of our legislative bodies appear to so regard it.

It has been well said by one of the most eminent of the executive officers of health, Dr. Russell, of Glasgow, that "nothing is more conspicuous than the helplessness of the individual under the conditions of civilized life to secure the physical basis of health."

How can any single individual in a crowded city make any successful effort to improve, or even to ascertain the quality of the public water supply upon which he is exclusively dependent? What can he do to secure a sufficiently prompt and safe removal of the waste materials of his daily life? How can he analyze the ingeniously sophisticated articles of food or medicine which may represent the ingenious employment of all the scientific skill that selfish capital can purchase? How vain it would be for him to attempt to prevent the crowding of the city, or the contamination of the air which he is obliged to breathe. Lastly, how can he recognize the presence of communicable disease, and recognizing, keep it at a distance?

There is no help but in coöperation on the most extended scale possible, individual, municipal, State and National. The individual must be compelled to give up his liberty to injure his neighbor. The great city must be restrained from converting the stream that flows past it into a sewer that shall poison the small villages that cluster about its banks lower down in its course. The country farmhouse must no longer, when a case of enteric fever occurs there, be a menace to the water that supplies a thousand city houses. No State should permit its own causes of disease, whatever they are, persons or things, to be transported into another State, nor pollute the common water supply. Lastly, the General Government should take cognizance of those causes of disease which can be controlled by no other power, or which are so general that the responsibility for them is National, or so overwhelming in their ravages that smaller political bodies have lost the power, if not the will, to protect the people.

Voluntary association on the part of persons, towns, States, or Nations even, will never establish a sufficient safeguard when one dishonest or ignorant associate has it in his power to nullify all the effects of a neighbor's spirit of self-sacrifice and restraint.

Epidemic disease is an evil that cannot be left to work out its own cure; it widens its circle too rapidly, and the time is long past when any quarantine, using the word in its older sense, would be sufficient to restrain a pestilence within the limits of the district whose sanitary crimes might have fairly deserved some punishment.

How, then, shall we organize for the protection of the public health?

For the individual, that he may not injure his neighbor through his own ignorance or that of his adviser, let the State give him some assurance that the legally used title of physician designates a person sufficiently qualified to give advice for the prevention and cure of disease—and a certainty, also, that the quack who steals the title shall be punished.

Establish, by direct provision of State law, local health authorities for each well-defined unit in our various forms of local government: village, town, city or county. Place in the hands of these authorities the execution of the laws of the State and all local ordinances and regulations pertaining to the public health, impress upon them the duties of watching all those conditions which immediately affect the health of the people; water supply, sewerage, sanitary condition of school-houses and scholars, factories, tenement houses and the markets, periodic inspection of the inhabitants to prevent the neglect of vaccination; house to house inspection at least annually. In brief, they should have all the powers which society assumes for protecting the public health.

To meet the possibility that some districts may not have intelligence enough to appreciate, or that powerful commercial or other interests may interfere with, these laws, there should be a State authority with ample powers.

This would be called upon for the purpose of harmonizing the action of the various local boards, where the interests of various localities were involved. It should have coördinate power with all local boards in cases of communicable disease, in order that its action may be prompt and salutary. It should be enabled to carry on scientific investigations as to the causes of disease, to suppress noxious and offensive trades, as it will often happen that some great industry will possess in a community an influence sufficient to control the local board of health. This condition did in fact exist in Massachusetts, and no action of our State Board of Health in its earlier years was more heartily commended than that which transformed a town pestilent and disgusting from some fifty slaughter-houses into an attractive suburb of Boston. The business of slaughtering and rendering is now, in consequence of the action of the Board, carried on in an abattoir entirely without offense.

This authority should also have the supervision of the laws for the prevention of the adulteration of food and drugs.

It should have the general oversight of the public water supplies.

It should have charge of the registration of vital statistics, and of the investigations of the diseases of animals so far as they affect the health of man.

The educational element should be always present in the work of the State and local boards of health; and as in all other affairs of life the value of the lesson will stand generally in direct relation to the cost of it. The person who receives the benefit of a sanitary improvement should pay, if able to do so, a part, at least, of the cost, and should never be permitted to lose a sense of the obligation of preventing the spread to his neighbor of unsanitary conditions of his own making.

All the arguments that have been used for the existence of State health authorities are also available, it seems to me, for the creation and support of some organization for the protection of the public health in connection with the general government. I think that the medical profession is agreed, that no power less than that of the National Government will be sufficient to prevent the introduction of disease from abroad, or control its transport from State to State. There is, of course, a question as to what form that central authority should take and how extensive should be its power.

The well being of the country, to use the language of the Constitution, should imply that we must know all that can be known about those diseases and causes of disease which may affect the whole country.

Although the actual epidemic prevalence of disease of grave and frequently fatal character may be limited to certain districts; still the disturbance of commerce and the ordinary relations of life will extend to large sections of the whole country. Therefore the National health authority should have the power and the means necessary for a thorough investigation of the communicable and epidemic diseases and of the best means of preventing their spread. These investigations need not be limited to this country; in fact, it is quite evident that several of the most important diseases of this class must be also studied outside of the country, yellow fever, for instance.

The General Government should also make avail-

able for use in all parts of the land, the information from foreign countries, as to the prevalence there of contagious and epidemic diseases. Not simply such communications as may be made by consular officers; for these as a whole have probably no great scientific value; but that great mass of information which through one channel or another reaches Washington.

To this should be added the statistics of mortality and disease already published by very many boards of health throughout the land, and not now readily available for use, except by difficult and tedious search through many documents accessible to few.

In connection with this statistical work would naturally be associated some arrangement for the prompt receipt of information from all sections of the existence of dangerous communicable diseases; for the purpose of warning from a central office all interested communities. A voluntary system of notification, established by the National Conference of the State boards of health, has proved of much service, notwithstanding the fact that some of the great States have abstained from giving this information in a useful manner. But the usefulness of this method of communication has been seriously limited by the want of a central office with comparatively simple system for sending prompt advice in any required direction.

Not the least of the very many claims of the National Board of Health upon the medical profession was its attempt to secure uniform systems of registration and vital statistics, and a nosology adapted to the changed views now entertained as to the nature of many diseases. This work should be taken up again and carried on, if necessary, by liberal appropriations for the purpose of encouraging and assisting everywhere a continuous registration of vital statistics in suitable manner.

Dr. Billings, the wise and experienced officer in charge of the Mortality and Vital Statistics of the 10th Census, says:

"But, as the United States has no system of registration of vital statistics, such as is relied upon by all other civilized nations, for the purpose of ascertaining the actual movement of population, our census affords the only opportunity of obtaining even an approximate estimate of birth and death rates of much the larger part of the country, which is entirely unprovided with any satisfactory system of State and municipal registration; and the data which the census gives, imperfect as they are, are the only ones by which we can compare the healthfulness of this with that of other countries, or can ascertain, even approximately, the relative salubrity, or liability to particular forms of disease, of different parts of our own territory." And again, "Nothing pays better than good book-keeping in national affairs, and in no part of a nation's work is good book-keeping more useful than in keeping records of the life and health of its people."

The most troublesome point in the whole enquiry remains. How far should the General Government enter into the management of quarantine?

Though I come from a State which has never asked the assistance of the authorities at Washington during any pestilence within her own border, and is not likely to do so in the future, and is at the same time fortunate enough not to have felt for three-quarters of a century the terrors of the pestilence which has wrought such havoc in other States. With all this I say, that it seems to me the duty of the whole country, through the national authorities, to assist those communities which are too weak to help themselves, and to undertake the health functions of local government for those too ignorant to know their remedies.

A satisfactory settlement of the question as to the power to be bestowed on the national authority depends, it seems to me, very much upon the form of the organization. If that of a board should be selected with an adequate representation of the separate States, there would then seem to be no serious objection to the bestowal upon this board of a direct control of quarantine. The points in dispute between the General Government and the States would appear to be safe in the hands of a board of national authority and directly representative of the States. It is quite probable that such a board would be cumbersome in form and not altogether easy to control—which is far from being an unmixed evil—but there are many contrivances by which a large board can delegate its powers to an executive committee during the intervals between the general meetings—meetings which need not be frequent. I can easily see, however, that this question is one for the law-maker rather than our profession.

The only alternative seems to be a single officer at the head of a bureau in connection with some one of the departments at Washington. An officer not charged with great executive powers, who shall have, so far as it is possible, unlimited authority to investigate, by himself or by competent experts, the questions which directly relate to protective medicine. He should be at the head of all the current medical statistical work of the Government, with the exception of that of the public services. He should be in constant and harmonious relations with the scattered health authorities of the land and should be permitted to coöperate with them in sanitary work. He should be subjected to the distractions of no other service—neither of the Army, of the Navy, nor of the Marine Hospital Service. The vast dimensions to which State medicine has already grown, the apparently unlimited field for future extension, make it evident that nothing less than all the thought and all the working hours of the best man are not too much to be devoted to the supervision alone of the investigations which ought to be made not in one year of epidemic panic, but through all years.

The very manifest advantage to this officer of a board of advice could and would in the very nature of things, be afforded by some representative of the State boards of health, quite similar, perhaps, to that now existing in the National Conference of State Boards. The need of early and confidential intercourse with these intelligent, active and responsible bodies would suggest itself at once to the sagacity of any man who would be likely to hold this important office.

I believe that both the Department of Agriculture and the Bureau of Education have from time to time called to their aid representatives of the agricultural and educational interests of the whole country.

Of the sanitary investigations carried on by the authorities at Washington, with the exception of those under the direction of the National Board of Health, it is not possible to speak with much satisfaction. Not that the scientific men who conducted them were not entirely competent; it would have been difficult to have found men as well qualified as many of them have been. But it was very difficult in a year of health to secure the necessary action authorizing investigations of diseases that might at any time enter our country, and there is every probability that it will be equally difficult to secure the means of continuing the work.

Dr. Shakspeare was sent abroad, in 1885, to make investigations of Asiatic cholera, then raging in Southern Europe. Beyond a few brief notices in the medical journals, one State board of health at least knows nothing, through any official information through any department at Washington, of the results of the enquiry. As the board of Health alluded to is charged with the coördinate responsibility of watching the second largest port of entry in the Union—which has a more frequent communication with cholera infected ports than any other, except New York, the failure to communicate valuable knowledge is inexcusable.

Again, in 1885, at the Washington meeting of the American Public Health Association, as well as at the meeting of the National Conference of Boards of Health, measures were taken for bringing to the attention of Congress some of the alleged facts in regard to the preventive inoculations in yellow fever practice in Mexico, by Carmona, in Brazil, by Freire. Congress was requested to appoint a committee of experts to visit these countries and ascertain the truth of the statements made. Notwithstanding the apparent willingness of the authorities to grant the petition, the inevitable delay attendant upon National legislation prevented action until the summer of 1887, when the appointment of a single expert was authorized. The President, with great promptness, appointed an expert of the best qualifications—and Dr. Sternberg made a journey to Brazil, and subsequently to Mexico. The year does not appear to have been so favorable for his purpose of studying the subject during the general prevalence of the disease as one of the preceding years would have been. Nor under his rigidly drawn instructions does he seem to have had all the advantages that would have accrued to an investigation less controlled by precise orders.

Unfortunately, the evidence submitted by Drs. Carmona and Freire appears to have been entirely insufficient to justify the claims made by them of the discovery of the yellow fever germ, nor has a prophylaxis of yellow fever by their inoculations been yet demonstrated.

It is a disappointment that we have not reached the result, that seems only just beyond our grasp; these claims, however, had been advanced so confidently by men holding honorable positions; inoculations had been made on so extensive a scale, that a formal examination had become a necessity. Dr. Sternberg's investigations are worth all the money that has been spent upon them. The way has been cleared for an exhaustive examination of this most virulent of important pests; an inquiry that should have no limit of time, short of the discovery of a sufficient cause, and if possible, of a preventive; even if an expenditure of money be required, only less than the number of dollars that inadequately measure the country's losses and sufferings under this scourge.

It would be a satisfaction to all of us, I am sure, if Dr. Sternberg is enabled to complete the work so faithfully and intelligently prosecuted from the Havana investigation of 1879 to the present day.

But it must be regarded as a misfortune that scientific work of this sort should not be continuous, and free from the irksome burden of limited time and meagre appropriations.

I approach the conclusion of this possibly wearisome repetition of common-places with some hesitation, for I wish to say a few words about the National Board of Health, still by Act of Congress in legal existence, by neglect of Congress in a state of hopeless lethargy. This Board entered upon its work with every promise of success—the members of it were the best our profession could offer—the contributions to public hygiene, both by the services of its members and the labors of its experts, have their due and honored place among the records of such work the world over.

It demonstrated for the first time in this country, I venture to say, that local, State and National health authorities could profitably and harmoniously unite in suppressing an epidemic of yellow fever, and preventing its spread from State to State; and that, under the influence of an impartially vigilant sanitary inspection and treatment, trade and commerce need not materially suffer. Yet all this has not saved it from practical extinction. Mistakes were probably committed, but they are trivial as compared to the merits of the Board. I feel forced, for my own part, to the conclusion that its organic form—quite distinct from that of a body of such powers with which I am acquainted, and unlike anything in our own National Government—must explain the failure to survive the unjustifiable attacks made upon it.

The presence upon the board, of representatives of the Army Navy and Marine Hospital Service, however conspicuous may have been the attainments of their respective representatives, was not advantageous. They represented interests which ordinarily are of far less consequence than those of New York, Chicago, New Orleans, or San Francisco.

It would not be possible, I think, to select seven men—that being the number of the appointed members of the Board—who should adequately represent the various divisions of the country. The States are not accustomed to a representation at the hands of other States, and the State not directly represented will find it difficult to understand the principle of selection.

The great States of Ohio and Pennsylvania have

not been directly represented on the existing Board.

Is it well to wait until a new outbreak of yellow fever, or the landing of cholera gives us legislation founded only in the weakness of fear?

I cannot but think that it is better to have the substance of things whether it comes in the form of Bureau of Health or Board of Health; provided only that some of the great resources of the Nation shall be turned to the protection of that property which is at least as valuable as the cotton fabrics of a Massachusetts mill or the wool of Ohio sheep. I mean the protection of that greatest property of all —human life.

ORIGINAL ARTICLES.

CASES OF IDIOPATHIC ANÆMIA.

Read before the Medical Society of the District of Columbia, February 8, 1888.

BY ROBERT T. EDES, M.D.,
OF WASHINGTON, D. C.

I do not intend here to give a systematic history of this interesting class of cases, but only to call attention to some of the prominent points illustrated by some which have fallen under my own observation. A very complete and lucid account of the general subject is to be found in the article by Dr. Osler in "Pepper's System," vol. iii. It is necessary, however, for the sake of clearness, to mention the more characteristic and diagnostic points which justify us in giving to a case of anæmia the designation of idiopathic, essential, or progressive pernicious. The latter adjectives are only applicable to a part of the cases which are properly classed together by every characteristic except a fatal termination, and it is not justifiable, certainly until the nature of a disease is better known than that of the one under consideration, to incorporate in its name a prognosis which is not an invariable one.

The first of these points is the intensity of the anæmia; often, and, indeed, frequently, without emaciation, or at any rate with a degree of emaciation which does not correspond in degree to the anæmia. The color of the skin in cases of this kind, owing to the fat which is still retained under it, is yellow and waxy rather than white, as it is more likely to be in the forms of anæmia depending on malnutrition, and might sometimes suggest jaundice, but does not, of course, extend to the conjunctiva.

The count of the blood corpuscles is low, lower even than the amount of coloring matter would indicate, presenting in this respect a marked contrast to the anæmia of chlorosis. It not infrequently, even in cases which recover, falls below 1,000,000 to the cubic millimetre, the normal being in the neighborhood of 5,000,000 for men and 4,500,000 for women.

The proportionate color of the blood (hæmoglobin) may be a little greater, so that the individual corpuscle is even a little richer in hæmoglobin than normal. In chlorosis, on the other hand, the hæmoglobin contents of the blood are much more diminished in proportion, and the individual corpuscle is much less colored than it should be.

A few weeks ago I counted the corpuscles of a chlorotic young woman and found but little diminution of the count below normal, while the color test (which has been several times repeated with the same result) gave only about one-third of the normal.

The shape of the corpuscles is irregular. They become swollen, more nearly spheres than discs, and sometimes look like a foot-ball partly blown up, or they are elongated and assume the shape of a pear, a battledore, or a snow-shoe, or they have tails. This is more obvious in a fresh than in the dried specimen. In size also they vary within wider limits than the normal, and there are found very large and very small individuals (megalocytes and microcytes).

The specimens I show here were kindly photograped for me from a dried specimen of the blood of the last case I shall report, by Dr. Gray, of the Army Medical Museum. I show a photograph of normal blood by way of comparison. Some other less important and less constant changes are sometimes observed. The proportion of white corpuscles is not materially changed.

While the irregularity of shape would of itself, in a case of which nothing else was known, be sufficient to raise a suspicion of idiopathic anæmia, yet it is not quite certain that severe anæmia of other forms may not produce them. I have myself seen in other cases alteration in the shape of the corpuscles, not equalling in degree, but resembling, that of the form now under consideration.

So much for the form of anæmia. The next point is that there is no discoverable adequate cause for the condition; and here, of course, comes the opportunity for many difficulties and errors in diagnosis. It is obvious that many obscure diseases attended by a secondary loss of corpuscles and color may, before their true nature is discovered, be considered idiopathic anæmia. Abdominal cancer, not yet evident to the touch or not giving rise to distinct local symptoms, is one of the conditions likely to be suspected among the first. Anæmia from hæmorrhage which the patient does not think of sufficient consequence to mention, chlorosis, the various obscure diseases connected with changes in the spleen, lymphatic glands or suprarenal capsules, may counterfeit it more or less closely. A case in which idiopathic anæmia was among the conditions suspected, but which was found at the autopsy to be one of chronic pancreatitis, was reported in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION for December 24, 1887.

The difficulty is not lessened when, as not infrequently happens, there are slight symptoms pointing in some other direction, as will be seen in two of the following cases, where it would have been difficult, in the absence of a microscopic examination of the blood, to say that the anæmic appearance of the patients was not due in one case to an interstitial nephritis, and in the other to a chronic diarrhœa.

If we adopt the most alarming nomenclature and the prognostic views associated with it, the recovery

of the patient may be a fortunate but confusing element in the diagnosis.

The details of symptomatology I do not propose to describe. I will only mention, as of especial importance, digestive disturbances, great weakness, dyspnœa on exertion, and various hæmorrhages, including cerebral and retinal, the latter of which may have considerable diagnostic significance.

The most noteworthy recent contribution to our knowledge of this affection has been the observation, now many times repeated, that in a certain number of cases marked atrophy of the stomach tubules coexists with the anæmia. The temptation is naturally strong to attribute the anæmia to lack of nutrition. It is, however, not yet certain that the atrophy is not simply a part of a general degeneration, and dependent on, rather than causing, the diminished nutritive power of the blood.

The gastric symptoms, though present in these cases, are not so marked as we should expect to find in a case which is to end in so excessive a degree of anæmia. They are not by any means so severe as we may meet with in cancer or ulcer of the stomach, and yet the failure in the nutrition of the blood is much greater.

If it can be shown that, in a certain proportion of cases, gastric atrophy distinctly precedes the development of an extreme anæmia having the features of the form we are describing, it seems to me we can no longer call it "idiopathic or essential," for the cause is an adequate one, and we can only say that certain kinds of gastric (and perhaps further investigation may show, intestinal) atrophy, give rise to a set of symptoms closely resembling those which occur in other cases in which no such lesion can be found. It is to these cases that the adjectives "progressive pernicious" most strictly apply.

In another set, intestinal parasites, especially tæniæ, have been found, but not frequently enough to establish a rule, or to do more than make it desirable, in forming a diagnosis, to exclude this possible condition; which, however, has not, so far as I am aware, been noticed in this country. Neither are we afflicted with the anchylostoma duodenale which, among the workmen in some of the tunnels under the Alps, have been found to be the cause of a severe form of anæmia.

As regards etiology I can only say that in none of the cases I have to report has either of the most common causes been present. These are the puerperal condition or severe mental shock.

CASES.

I. An old soldier of characteristic appearance, with a blood count below 1,000,000, but 40 per cent. of hæmoglobin, had a slightly enlarged spleen for a time; but it soon disappeared from touch. This might have been considered a case of leucocythæmia had the blood not been examined and found not to contain any excess of white corpuscles in proportion to the red. His appetite was good and his digestion fair. He was soon lost sight of, but I have little doubt that his life was not long.

II. A young man, who had previously considered himself healthy and strong, noticed a loss of color in his face and soon began to have headache, dizziness, and noises in his ears. When seen he appeared muscular, not emaciated, but his skin was almost yellow and his mucous membrane nearly white. He expressed himself as feeling strong, and was not sure that he could not lift a barrel of sugar out of a wagon as he had been in the habit of doing; although, half an hour previously, he had nearly fainted on walking from the ward to the lecture-room.

There were a good many purpuric spots on his body, and also retinal hæmorrhages.

A blood count gave less than 670,000 red corpuscles to the cubic millimetre, but there was not so much change in shape and size as sometimes seen. The further progress of the case was unfortunately simple and uninfluenced by treatment. He steadily and rapidly lost strength, becoming so weak that he could hardly move in bed without danger of fainting. Delirium, diarrhœa, great dyspnœa on exertion preceded the fatal termination, which took place about seven weeks after he first felt himself sick. The autopsy revealed extreme anæmia without great emaciation; there were ecchymoses in various organs. There was granulo-fatty degeneration of the heart and kidneys, and there were opaque yellow patches in the stomach which may have been fatty, but of which there is no record of a microscopic examination. There certainly was not any well-marked atrophy of the mucous membrane. The aorta was of somewhat smaller calibre than usual, and its walls thin. The marrow of the femur was in places red and jelly-like, and contained, in addition to the usual constituents, a few nucleated red corpuscles. The marrow of the sternum was of a reddish-yellow color, but was not examined microscopically.

This was as typical a case of the "progressive pernicious" form as one often sees, and yet both symptoms and lesions remove it clearly from the class of those dependent (if any are) upon gastric atrophy; although it is by no means improbable that, had the patient lived some weeks longer, such an atrophy, consequent upon fatty deneneration of the glandular elements, might have followed.

III. A middle-aged woman was seen in consultation, presenting the characteristic external appearances. The blood was pale, but the corpuscles were not counted; as, not knowing the sort of case I was going to see, I had not provided myself with the necessary apparatus. They were, however, irregular in shape and size. Nothing else could be found by physical examination. She died in about ten days.

In this case there had been no pregnancy for some years and no mental shock.

IV. The next case, more chronic in its course, was that of a college professor 57 years of age. There had been a good deal of trouble in his family in the way of sickness and sudden death, but hardly anything that could be called a shock.

His general appearance was sallow; his face and hands brown, partly at least from exposure, his legs yellow. His wife had noticed the dark color. He complained chiefly of weakness, so that going up a slight elevation distressed him, and of oppression or sinking across the chest and in the epigastrium.

Pulse 100 to 108. His mind was clear. There was only slight and occasional digestive disturbance. Nothing was to be found by the usual physical examination except a soft systolic souffle along the left edge of the sternum.

The blood was not examined, partly because I had not prepared myself with the apparatus, but chiefly because my mind was occupied by a diagnosis which turned out to be erroneous. This was Addison's disease. The diagnosis of his attending physician, a man of wide experience and learning, rather inclined to abdominal cancer.

After some weeks, during which I did not see him again, he died, and there were found fatty changes in various organs and red marrow in the bones. There were no changes of the suprarenal capsules.

V. A man, æt. about 55, had been sick three years with anæmia without known cause, had recovered under the use of arsenic, again had the same trouble and again partial recovery.

When seen, in June, he had been failing since December or January. He was very pale, his face a little bloated. Nothing was to be got by physical examination except a tender spot at the epigastrium and one lower down. There was no jaundice, no hæmatemesis and no polyuria. It was supposed that there had been some fat in the stools. The blood corpuscles were irregular in size and shape. The diagnosis was idiopathic anæmia with a possibility of cancer about the head of the pancreas.

The autopsy, at which I was not present, showed the muscles to be dark-red, but the other tissues blanched. The stomach was thin and pale; the pylorus and duodenum contracted to about one-third the ordinary size; small intestine pale but healthy. Pancreas normal; mesenteric glands somewhat enlarged. There may have been some increase in the connective tissue of the kidneys. Unfortunately, there was no microscopic examination of the stomach or of the marrow of the bones.

An examination of the gastric tubules would have been highly satisfactory, but there seems good reason to suppose, from the gross appearances, that this was one of the cases of atrophy of which several have been minutely described.

VI. A ship carpenter æt. 41, a man of large frame, not fat but by no means emaciated, had not been well for two years. Complexion pale and yellowish. He complains of weakness, headache, and dyspnœa on exertion, and loss of appetite. His sight is dim and he is somewhat deaf. Slight cough without expectoration, pain in the lumbar region. He has had a little œdema of the feet and ankles. The urine shows some traces of nephritis, which disappeared in a few days. The improvement in this respect, it should be noted, took place before his general condition was much better.

The diagnosis might easily have been made of a moderate nephritis in the way of recovery, had not the condition of the blood, both as indicated by his complexion and the count, been entirely out of proportion to the amount of nephritis. The character of the corpuscles was of the usual kind, they varying both in size and shape, while the successive counts were as follows:

May 20, 780,000; May 27, 735,000; May 31, 955,000; June 7, 1,290,000; June 14, 2,036,000; June 24, 2,695,000.

This is one of the cases where uncertainty in diagnosis arises from recovery. Soon after this last count the patient eloped from the hospital and continued well enough to elude my search as, although I got distant tidings of him as being pretty well, he evidently thought I wanted him for some legal rather than scientific purpose. At an early period of his sickness, after about a fortnight of very careful feeding, rendered necessary by his deficient nutrition, being, in fact, partly by the rectum, he made an unauthorized meal of ham and eggs without harm, which seems a valuable piece of negative evidence as regards any atrophy of the stomach. The treatment, in addition to the diet, consisted in arsenic in the form of Fowler's solution.

VII. D. C. P., a young man, with chronic diarrhœa, anæmic, very weak, pale and listless. The diarrhœa improved and disappeared under the use of large mildly astringent enemata.

Examinations of his blood were as follows:

Oct. 14, 763,000. No excess of white. A good many of small diameter. A good many pointed and tailed. Oct. 21, 1,019,000. Oct. 31, 1,877,000. Nov. 5, 1,665,000. Nov. 10, 2,178,000. Nov. 15, 2,438,000. Dec. 10, coloring matter about 50 per cent. of the normal. Dec. 13. Discharged, gaining in flesh, strength and blood. Went to Florida.

VIII. A man æt. 71, of active habits, had not been well for two years except during a visit to California the previous winter. He was seen on January 13, 1887. Last September he noticed shortness of breath on exertion, his feet and legs felt cold. Six weeks ago, on going out into the street, felt a sudden weakness of the legs and was obliged to return, which he did with much difficulty, being hardly able to get up the doorsteps. When I saw him he was in bed, though he was able to stand up for a part of the examination. He complained chiefly of coldness and stiffness of the legs, as well as of weakness but of no pain there. There was considerable pain about the rectum which turned out to be largely due to his over anxiety on the subject of his bowels and consequent over treatment. It soon ceased to give him further trouble. A sensation of constriction or pressure across the lower part of the bowels was a constant accompaniment of the case and seemed to have little or nothing to do with any condition of constipation or otherwise.

With the history of his sudden attack and the peculiar sensations and weakness in his legs my attention, like that of his family and his former attendants, was naturally directed toward any evidence of spinal disease. The limbs could be moved freely in any desired direction as he lay in bed. The muscles were flabby and small but not decidedly atrophied and reacted well to the faradic current. Sensation was everywhere present, and both superficial and deep reflexes were of nearly normal intensity. He could stand with his eyes shut.

Examination of the urine, rectum, and the fundus of the eye gave negative results.

There was a systolic murmur at the base of the heart transmitted toward the right, and some prolongation of respiration over the whole chest, but no distinct râles. I should have said that their was considerable expectoration of thick mucus. A count of the blood a week after my first visit gave 1,575,000 to the cubic millimeter with many of the corpuscles irregular and small. My diagnosis excluded any distinct organic spinal disease, as hæmorrhage, softening, or inflammation, or the systematized scleroses, and attributed the abnormal sensations and the pseudo-paralysis to anæmia of the cord as a part of a general condition. I was not able for some time to rid myself of the suspicion of malignant disease of the vertebræ, or of some abdominal organs, but repeated physical examinations with negative results, and the absence of any new symptoms pointing to such growth, together with the positive results of an inspection of the blood, left no alternative open but idiopathic anæmia. Whether the feeling of tightness across the lower part of the abdomen was simply an abnormal sensation like the rest I could not be sure, but it certainly was not due to any distension or growth.

The dependence of a well-marked paraparesis upon a general anæmia is a phenomenon of sufficient interest to justify a digression. Anæmia and hyperæmia of the spinal cord, from the very nature of the case, and in fact much like the corresponding conditions in the brain, have been the subject of many more suppositions (most of them reasonable it is true) than of direct observation.

Localized anæmias of the spinal cord may be produced by obstruction of the aorta or by embolism of the spinal arteries. A theory has also been held that in some of the so-called reflex paralyses a spasm of the vessels cuts off the blood supply from more or less limited areas of the cord. With these, however, we are not at present dealing.

The existence of a paraplegia dependent, not upon a local anæmia, but upon a general one is, however, admitted, though certainly not at all common in a well marked form. Cases of paraplegia after severe puerperal hæmorrhage, such as have been a large proportion of those reported, cannot be regarded as quite so conclusive in this way, since other puerperal processes like septicæmia and thrombosis may complicate the matter, but undoubtedly a part of them are of this character. There have been, however, others where large hæmorrhages from the bowels have been followed by a temporary paraplegia, and one where such a paraplegia consequent upon uterine hæmorrhage and in process of recovery, underwent two exacerbations on renewal of the hæmorrhage. Another case occurred after profuse epistaxis.

Last winter I saw with my friend Dr. Bates, of the Navy, a case of this kind, a young man under the care of your Secretary, Dr. Adams, who intends to report in full. He had suddenly lost the power in his legs. His history at first would have led one to suppose that the sudden paralysis was the beginning of his illness, and naturally enough to think of hæmorrhage into the cord or its membranes or a very rapid myelitis, but it appeared on further inquiry that he had been having frequent and profuse hæmorrhages from the rectum for a long time previous, but had kept about his usual work until this attack. When I saw him there were no disorders of sensation, his reflexes were normal, and voluntary motion of every kind was present though not very strong. The hæmorrhage, which came from a small vessel an inch or two above the anus, was being treated by Dr. Adams with the result of a complete restoration of the functions of the spinal cord.

It is not difficult to explain why deficient supply of nutriment should affect the spinal cord sufficiently to cause a loss of function, but it is not so clear why the cessation of function should come on so suddenly when the condition that causes it must be gradual in its development; nor why it should be confined to the lower segment of the cord when the anæmia is general.

We can find analogies, if not an explanation, for the first difficulty, as for instance, in fatty degeneration of the heart which certainly must be developed very slowly but which kills very rapidly. The nervous centres of the heart pushed to the full extent of their failing powers break down under a sudden increased demand. The last straw breaks the camel's back. As to the second, there may be some conditions of the circulation which render the effects of a general anæmia more perceptible in the lower part of the cord, or, what is more probable, that the lumbar enlargement is sooner exhausted because more usually called upon for a *constant* expenditure of energy than that portion which supplies the arms. It is often noticed in animals coming under the influence of a paralyzing poison that they continue to drag themselves around by the fore paws when the hind legs no longer support them.

Hilton Fagge says he knows of no case where anæmic paraplegia has been reported in connection with pernicious anæmia, but the fact of his making the remark shows that this sagacious observer recognized the possibility of such a connection.

The further progress of the case is briefly told. Careful feeding and the use of tonics, especially arsenic and strychnine, improved the nutrition. The patient gained a little flesh and a little strength. His blood counts went from the original count, on Jan. 21, 1,575,000; Jan. 28, 1,425,000; Feb. 26, 1,620,000; March 27, 1,850,500; April 19, 2,060,000; May 23, 2,250,000; June 13, 2,540,000; coloring matter 70 per cent. By this time he had gained considerable flesh and some strength, was eating, enjoying and digesting, a very good variety of solid food. It was noticed soon after this that the patella reflex was wanting, but there were no other symptoms of increasing paralysis. There was a good deal of stiffness and some pain about the hips and the hands, and one episode of constipation and irritative diarrhœa relieved by a dose or two of castor oil. The question of his going away to avoid the hot weather was discussed, but he preferred not to give up the comforts of home until he felt stronger, and during the extremely hot weather of last July he contracted an enteritis from which he rapidly sank.

The only notable point in the treatment, not al-

ready mentioned, was the use of inhalations of oxygen for some weeks, but so far as the patient or I could see, it did no good.

MEDICAL PROGRESS.

SURGICAL INTERVENTION IN AFFECTIONS OF THE KIDNEY.—A. BRODEUR has published a work entitled "De l'Intervention Chirurgicale dans les Affections du Rein" (published by G. Steinheil, Paris, 1886) in which he examines 327 operations on the kidneys.

Of the 327 operations 212 were performed on females, 94 on males, with 15 children, and 6 cases in which the sex is not given. In 136 cases the right, and in 105 cases the left kidney was concerned. In 86 cases the side is not mentioned. Of the 327 operations there were 235 nephrectomies: 125 lumbar with 62.4 per cent. of recoveries, and 110 abdominal with 50 per cent. of recoveries. There were 43 nephrotomies: 34 lumbar with 67.64 per cent. of recoveries, and 9 abdominal with 77.77 per cent. of cures, 39 nephrolithotomies: 36 lumbar with 77.77 per cent. cures, and 3 abdominal, all of which died. Ten lumbar operations for nephrorrhaphy, with 90 per cent of recoveries. Thus, of the 327 operations 200, 61.16 per cent., were followed by recovery. In 1885 S. W. Gross recorded 233 collected cases of operation on the kidneys, with a mortality of 44.6 per cent., including 93 nephrotomies with 23.1 per cent. mortality. In a later communication he gives a collection of 17 nephrorrhaphies with only one death.

The indications for the different surgical operations on the kidneys, as given by Brodeur, may be thus summarized:

In wandering kidney which causes severe symptoms, nephrorrhaphy should first be tried after the failure of other measures, and if this be unsuccessful nephrectomy should be done.

In hydronephrosis which calls for operative treatment, and in suppuration of the contents, Brodeur recommends nephrectomy. Should a fistula remain, a nephrectomy may be done later under favorable circumstances.

In simple congenital or acquired cysts of the kidneys, including echinococci cysts, the author advises against nephrectomy, and holds that nephrotomy only is allowable.

In carcinoma of the kidney Brodeur believes that, on account of the heretofore very unfavorable results, the surgeon should not proceed to a radical operation without careful examination of the other kidney, whilst for sarcoma of the kidney, he strongly advises extirpation, as well as in cases of benign renal tumors. In small, painless, and otherwise not troublesome benign renal tumors the surgeon should at first abstain from any operation.

In severe contusion of the kidney the author adopts Simon's rules: In uncontrollable hæmorrhage, ligature of the vessels and resection of the kidney; in beginning suppuration, nephrotomy. It is also advisable to remove the organ in prolapse with threatened gangrene.

In renal and ureteral fistulæ which cause much trouble to the patient, nephrectomy can seldom be avoided.

In renal calculus nephrolithotomy by lumbar incision is most advisable; more so than depriving the patient of a kidney by a dangerous operation. In pyelo-nephritis due to concretions, on account of the comparative frequency of affection of both kidneys nephrotomy or nephrolithotomy is preferable to nephrectomy. For the same reason nephrotomy is to be prefered in suppurative pyelo-nephritis following diseases of the urinary passages, prostate, etc.

Tuberculous pyelo-nephritis should scarcely be subjected to surgical interference at its beginning. In further advanced tuberculosis of the kidney, suppuration, caseous degeneration, perinephric abscesses, etc., nephrectomy seems to give better results than simple incision of the kidney and removal of the caseous mass.—*Centralb. für Chirurgie*, No. 20, 1887.

LARYNGEAL PHTHISIS TREATED BY LACTIC ACID AND IODOFORM.—DR. LUC has obtained successful results by the treatment of tuberculous ulceration of the larynx with lactic acid and iodoform, recommended by M. Krause, of Berlin, and M. Heryng, of Warsaw, in the case of a young woman suffering from laryngeal tuberculosis. The patient was weak and thin; the least fatigue produced dyspnœa, and, aggravated the wheezing from which she constantly suffered. At night there was fever followed by profuse perspiration. The voice was completely lost. The patient coughed incessantly, and the sputa contained numerous bacilli. There was dulness, with moist râles at the apex of the left lung. The epiglottis was but slightly affected. The vocal cords were red and swollen, and could not be completely adducted; this was apparently due to infiltration of the mucous membrane covering the arytenoid cartilages, which was studded with excrescences which were especially prominent in the glottis. The appetite was poor. The patient complained of intense pain in the larynx when she coughed or spoke. A few days' rest was prescribed, during which medicinal inhalations were administered. The larynx was anæsthetized by means of a 1 in 5 solution of hydrochlorate of cocaine applied with a brush. The arytenoid excrescences were destroyed by galvanocautery. At the end of a fortnight the eschars came away. The infiltration of the mucous membrane was considerably reduced. The membrane presented a granulating surface of healthier appearance. The vocal cords were more easily brought together, and the voice was much stronger. During six months the larynx was constantly painted with a 50 per cent. solution of lactic acid. Powdered iodoform was insufflated after each application of the acid. Under this treatment the patient recovered her voice. The stridor and laryngeal pain disappeared; expectoration diminished; nocturnal coughing ceased. Dr. Heryng, who examined the patient

after this treatment, regarded the laryngeal lesions as completely healed. This method had no effect on the general tuberculous symptoms.—*L'Union Méd.*, Feb. 16, 1888.

INDICATIONS AND METHOD OF PERINEOPLASTY.—O. KÜSTNER attempts to show that every old perineal rupture, even the smallest, should be healed by perineoplasty, as even small cicatrices of perineal tears cause trouble. Besides the troubles caused by prolapse of the vagina and retroflexions, must also be considered neuralgic symptoms, pruritus, intertrigo, and pains in the cicatrix during coition and defæcation, as well as nervous symptoms, often of a severe nature, and severe pains in consequence of stretching or tearing of old parametric adhesions by the vaginal prolapse.

Küstner compares the different operations for incomplete perineal rupture. He distinguishes between the double-pointed operation of Hewitt, Freund, Martin and Bischoff, and the bilateral-symmetrical operation (Simon-Hegar, Winckel). By the first the perineum is rendered most resistant. He thinks that the median rupture should be operated on by the bilateral-symmetrical, the typical forked tear by the other method. For complete rupture Küstner regards the double-pointed method as the only natural one.

In regard to the technique of the operation, the first care must be given to an antiseptic method of freshening and to an antiseptic suture material. For the latter he recommends silver wire and silkworm gut, as they do not act as drains. The sutures should be so placed that there is no dead space. It is best to embrace from the vagina about ⅔, and from the rectum about ⅓ of the depth of the recto-vaginal septum. Vaginal and rectal syringings after the operation are injurious. In 36 operations he has used a 20 per cent. solution of cocaine for anæsthesia, 20 times with good, and 8 times with perfect results. The flaps are made with a half-dull scalpel. The two points are united by a continuous suture, and button sutures are placed in the vestibule, rectum, and on the perineum. The patients are kept quiet for 14 days. Küstner thinks that by this method the cures should be 99 or 100 per cent.—*Centralbl. für Chirurgie*, No. 25, 1887.

OCCLUSION OF LARGE ARTERIES BY FLAT LIGATURES.—The London correspondent of the *Philadelphia Medical Times* mention three cases reported to the Clinical Society of London, going to show that it is unnecessary, and inadvisable to rupture the coats of a large artery when applying a ligature in its continuity. In one case the superficial femoral artery was thus occluded for popliteal aneurism; kangaroo-tendon was used, and drawn tight round the artery in a clove-hitch without rupturing the coats; pulsation in the tumor was arrested immediately and did not return. The patient, a woman, æt. 45, made an uninterrupted and perfect recovery, but was kept in bed for seventy-two days. In the second case reported to the meeting, secondary hæmorrhage had occurred after amputation at the hip-joint, for sarcoma of the femur. As it was thought that it would have been fatal to the patient to have opened up the flaps to search for the bleeding vessels, and as pressure on the common femoral controlled the hæmorrhage, a clove-hitch was put around that artery. No return of hæmorrhage took place, and the patient made a good recovery. MR. PITTS, who performed the operation, justified his departure from established practice by asserting that the old fear of hæmorrhage at the seat of ligature was not felt by a surgeon who placed a flat ligature on the vessels and did not divide the coats, but merely closed the lumen of the vessel.

MILK JELLY AND MILK POWDER.—The *American Druggist*, for April, 1888, gives the following directions for preparing these milk foods:

As a variation in milk diet, the following is recommended by Professor Liebreich:

Heat one quart of milk with one pound of sugar, and when the sugar is dissolved continue the heat, at a boiling temperature, for about ten minutes. Now cool it well, and then add, *slowly* stirring, a solution of 1 ounce of gelatine in a cupful of water. Next add the juice of three or four lemons and three wineglassfuls of wine, brandy, or other liquor. Set the glasses containing the mixture in a cold place, so that the contents may gelatinize. It is necessary to have the milk quite cold before the other ingredients are added, as it would otherwise curdle.

Dried milk, in the form of powder, may be prepared by evaporating skimmed milk in a suitable apparatus, preferably in vacuo and under continued stirring, at a temperature of 60° to 70° C. (140° to 158° F.) to a syrupy consistence. then mixing it with 30 to 50 per cent. of its weight of finely powdered sugar, and continuing the heat, with constant stirring, between 30° and 55° C. (86° and 131° F.) until the product has assumed a dry, granular condition.

ERGOT IN SUBINVOLUTION.—Some very interesting observations were recently made by DR. EMILE BLANC on the effect of ergot in involution of the uterus after labor. A fairly large number of women who had gone through normal labor were divided into three categories. Forty of them were left to Nature; forty were treated with daily hypodermic injections of Yvon's solution of ergotine (1 cc.=1 gram of ergot) during the first five days after delivery; and the remaining twelve were similarly treated for ten days. Daily external measurements were then made in all the cases to ascertain the size of the uterus, and on the fifth and tenth days its internal measurement was taken by means of the uterine sound. It was found that the administration of ergot during the first five or ten days failed to produce any favorable effect in hastening the process of involution, but that, on the contrary, it seemed to delay the normal retraction of the uterus. Ergot is nevertheless an exceedingly useful agent in the treatment of secondary hæmorrhage, and its action is more marked the less the interval of time that has elapsed since the confinement.—*British Medical Journal*, May 5, 1888.

A NEW METHOD FOR SUPPLYING THE GALVANIC CURRENT FOR MEDICAL USE.—CARPENTER, of Cleveland, describes his method of procuring the galvanic current for office use, as follows:

The device to which we have the pleasure of calling the attention of the profession consists simply in that of using the current of the incandescent lighting system direct from the street-wire passing the door—Thompson-Houston or Edison. We have the wires of the former system placed in our office, and by means of a rheostat resistance sufficient to reduce the current to a minimum is interposed, then by the use of an ordinary switch-board, the current is increased or diminished according as resistance is cut in or out. A milliampère meter is made use of whereby the current is accurately measured while the patient is in the circuit.

The device is absolutely safe, as the entire voltage of the wire can be handled without the rheostat being used. My wire furnishes a very smooth continuous or galvanic current, with an electromotive force of 110 volts with a maximum strength of $\frac{1}{10}$ of an ampère, equal to about eighty Leclanché cells. This current is constant, does not vary in voltage, and is always ready, night or day, as the main line from which my connections are made is used for commercial purposes, and furnishes lighting for basements, dark shops, and rooms. This, I am informed, is the case in all large and in many small cities, so that little trouble will be met with in securing a wire with a day current. When a wire is once placed in our office, the task of caring for a battery of cells is at an end, and we have an apparatus that is at once always ready, reliable, economical, cleanly, and durable. The rapid introduction of the incandescent lighting system, together with the great increase in the use of this form of light, will place within the reach of very many physicians this current of electrolytic work.

The charge for the annual rental of the wire is $10, not including the cost of putting in, which, if the main line passes the door, should not exceed $5. This device, as will be seen, does away with cells entirely, as well as the time, trouble, and expense of keeping them in order, and I venture to express, as my opinion, that we have a current superior to any that it is possible to have generated from chemical action, besides economy of room, which is not a small item in cramped quarters.

A word regarding the danger from contact with the electric-light wire. The Thompson-Houston or the Edison incandescent system of an electromotive force of 110 volts, and of a strength of $\frac{1}{10}$ of an ampère, is harmless, and must not be confounded with the arc system of Brush and others, as the strength of the latter is six ampères, and of course dangerous and must never be used.—*Medical Record*, March 31, 1888.

THE ANTISEPTIC METHOD OF TREATING BURNS AND SCALDS.—PROF. S. W. GROSS, of Philadelphia, suggests the following as by far the most efficient and painless method of managing burns and scalds. It is that practiced by Mosetig-Moorhof, and it is the one invariably employed by Prof. Gross. The vesicles having been opened and excised, the entire burned surface is smoothly covered with dry compresses of 20 per cent. iodoform gauze, over which gutta-percha tissue is placed. The whole is then surrounded by a thick layer of sterilized absorbent cotton between layers of corrosive gauze, which is secured by a roller with a moderate degree of pressure. Such a dressing rapidly relieves pain, prevents contact of air and infection by septic pus, and by its infrequency keeps the part at rest. It should be allowed to remain from seven to fourteen days. In burns of the second degree, one dressing suffices. In the worst burns, there is relatively little suppuration, and the eschars thrown off are aseptic. For burns of the face, iodoform ointment (1 part iodoform, vaseline 20 parts), is used, and covered with a gutta-percha tissue mask. The ointment should be removed daily.—*Practice*, April 15, 1888.

NOVEL METHOD OF APPLYING TAXIS.—MR. G. JAMESON, of Calcutta, writes:

A few days ago a native presented himself at the dispensary with a right large scrotal hernia, which had been down for some months. The man was placed on his back, and the tumor manipulated. The coverings were fairly tense. Before attempting reduction I casually asked the patient if the tumor ever got smaller? He replied "Yes," and proceeded to give me a demonstration in taxis which I had not previously heard of, and which will probably be new to many readers of the *Journal*. Lifting up the tumor with his left hand, he placed his right thigh on his abdomen, then crossed it over to the left side, catching the tumor between the pubes and thigh, then applying pressure. The hernia disappeared with a gurgle and a snap before I had time to call the attention of the students to this novel procedure. The reduction was complete.—*British Medical Journal*, April 28, 1888.

TREATMENT OF TYPHOID FEVER BY STROPHANTHUS HISPIDUS.—DR. POULET reports three cases of typhoid fever treated by means of strophanthus. The results obtained were "magical," and he knows of no remedy which can compare with strophanthus in the treatment of this disease. As an antithermic its effects are certain and persistent, and are not accompanied by any depression. It appears to hasten the period of defervescence and effectually controls the tendency to hæmorrhage. He recommends that it should be given early in the attack.—*London Medical Recorder*, April 20, 1888.

CHLORATE OF CALCIUM IN ECZEMA.—LIER gives the following formula for the use of chlorate of calcium in eczema:

Ung. zinc.		20 parts.
Talci		
Ol. cadin	aa	5 "
Aq. dest		10 "
Calcii chlorat		2 "

This paste has been found especially useful in chronic, obstinate eczema.—*Monatshefte für Praktische Dermatologie*, No. 8, 1888.

THE
Journal of the American Medical Association.
PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

SUBSCRIPTION PRICE, INCLUDING POSTAGE.
PER ANNUM, IN ADVANCE.....$5.00
SINGLE COPIES.....10 CENTS.

Subscriptions may begin at any time. The safest mode of remittance is by bank check or postal money order, drawn to the order of the undersigned. When neither is accessible, remittances may be made at the risk of the publishers, by forwarding in REGISTERED letters.

Address
JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS.

LONDON OFFICE, 57 AND 59 LUDGATE HILL.

SATURDAY, MAY 26, 1888.

WHAT IS THE PROPER MODE OF LIMITING THE NUMBER OF MEDICAL COLLEGES AND OF MEDICAL MEN?

Perhaps on no other subject is there greater unanimity of opinion among members of the medical profession, than that we have in this country too many medical colleges from which are annually graduated a number of students largely in excess of the legitimate needs of the people, and thereby productive of all the evils of an overcrowded profession. As was fully shown in the Address of the President of the American Medical Association, DR. GARNETT, published in THE JOURNAL, for May 12, 1888, with a population of 60,000,000 in the United States of America, we have 89 regular medical colleges, giving instruction to 9,591 students and graduating 3,209 each year, while the total number of practitioners is equal to 1 for every 580 inhabitants.

It is also shown that the increase in the number of medical colleges and medical graduates has been more rapid than the increase in population. This is correctly attributed, chiefly to the popular desire on the part of our young men to leave the agricultural, mechanical and mercantile avocations for the professions, and the absence of all proper barriers in the form of adequate standards of preparatory general education before entering upon professional study, and of sufficient direct professional attainments to justify their entering upon the practical duties before them.

The evils of an overcrowded profession and their chief causes are thus admitted by all who have given attention to the subject; but concerning the appropriate and practicable remedies there is much greater diversity of opinion. Some who appear to believe in the absolute paternity of governments would have either the National or State legislative bodies liberally endow, and at the same time arbitrarily limit the number of the medical colleges. These evidently overlook the fact that all legislative bodies in this country are composed of individuals who depend upon the votes of all classes of the people for their official positions, and a majority of whom are as poorly qualified to create and maintain a just, stable and efficient system of professional schools as are the majority of the voters who elevated them to office, and who at the next election may relegate them to private life and put a disciple of Christian Science or of the faith-cure in their places.

A much larger number appears to have full confidence in the sovereign power of resolutions. These would make us think that all the evils under consideration only need discussion at the annual meeting of the American Medical Association and the adoption by that body of resolutions solemnly declaring that no more medical colleges should be organized, and that existing ones should faithfully exact of every student before admission a thorough general education, a long period of medical college study, and the highest order of medical attainments before graduation, and the work would be done. We confess to having had some such faith in the efficacy of resolutions fifty years since. But after seeing that great National medical organization devote annually a fair share of its time to hearing able reports, earnest discussions, and the adoption and re-adoption of resolutions covering the whole subject of medical education for the first twenty years of its existence, without apparently making any material change in either the number or curriculum of the colleges, our faith in mere resolutions began to weaken; and we aided in doing just what Dr. Garnett recommends in the second "proposition" stated in his Address. It was during the annual meeting of 1866, that the Association, wearied with the ever recurring discussion, referred the subject of medical education to the faculties of the schools, accompanied by an earnest recommendation that they hold a separate convention of delegates from all the medical colleges of this country during the week preceding the next annual meeting of the Association, which was to be in Cincinnati, May, 1867. The recommendation was accepted and a majority of the medical colleges then existing, accordingly sent delegates to the College Convention that assembled in the Medical College of Ohio, May 3, 1867. Professor Alfred Stillé, of the University of

Pennsylvania, was made President, and Professor G. C. E. Weber, of Cleveland, Secretary. Three days were devoted to a faithful consideration of the important topics before them, resulting in the adoption of a most admirable scheme of medical college education, by a unanimous vote. Its chief features were briefly stated by the *Medical Record*, of New York, as follows: "First, a positive standard of preliminary education; secondly, a longer time in which to acquire a knowledge of the various branches of medical science and practice; thirdly, a systematic and successive order of studies for the student; and lastly, a certain amount of direct clinical instruction in a public hospital as part of the senior course."

The action of the convention was reported to the annual meeting of the Association then in session in the same city, and received the unanimous approval of that body; and may be found in full in the *Transactions*, Vol. 18, pp. 371–384, 1867. After the scheme thus carefully devised and doubly recommended had been before the faculties of all the medical colleges for two years, another convention was assembled in Washington, May, 1869, which was presided over by the late Professor S. D. Gross, which simply endorsed fully the action of the first convention; and yet the colleges continued in the old beaten path as though a convention had never been held, and three-fourths of them are there still, as shown by the statistics admirably presented in President Garnett's address.

If a new convention were assembled and another scheme devised and even unanimously recommended, who would enforce it? We have recalled these early and persistent efforts of the Association not for the purpose of claiming that they were useless because the schemes and resolutions did not enforce themselves or command obedience—for they have been of great service both in developing a correct public sentiment and correcting errors—but to remind the younger and more enthusiastic members of the profession of the ground already gone over, that they may avoid repetitions and be more readily induced to concentrate their efforts in a direction much more likely to reach practical and permanent results, as we shall endeavor to show at another time.

PUERPERAL INFECTION IN THE COURTS.

At a recent meeting of the Chicago Medico-Legal Society,[1] a suggestive paper was read on the "Medico-legal Aspect of Utterances made in Medical Societies." The writer selected, as his chief illustration of too positive opinions, expressed in medical debates, certain sentences from discussions of the Semmelweiss theory of puerperal fever that were held a short time ago before the Chicago Gynæcological Society. He spoke with lively feeling of the legal responsibility thrown upon the practitioner by the general acceptance of this doctrine. His skeptical allusion to the view of the identity of puerperal fever with puerperal infection constitute an anachronism, melancholy rather than curious or interesting, as clearly pointed out by more than one of the debaters. Examples of individual doubt and uncertainty of course need not concern us. The pathology of puerperal fever in its general outlines has long been definitely settled, and we can neither add to nor take from that which was authoritatively determined before the professional existence of most of the participants in the discussion just mentioned.

But the question of the legal responsibility of the attendants in the event of fatal puerperal fever, incidentally brought out in the paper, is of practical moment and worthy of more than passing notice. As at present informed, the exact limits of accountability before the law of the obstetrician under these conditions have never been finally decided in this or any other land. Indeed, in America, suits of alleged malpractice on this ground are so rare that almost no legal precedents can be regarded as established. The notion of professional loyalty, after all, is very clearly defined in the medical mind with us in the United States. It is seldom merely a sentiment. In the majority of cases, fealty to the profession is looked on in the light of a stern duty. This fact becomes more apparent in courts of law than in the sick-room. "From time immemorial," an able writer[2] remarks, "the theoretical course has been to express differences of opinion with all consideration in the presence of the colleague, and then to support him and to strengthen his position with the patient and his friends." Unhappily, this state of affairs is not always observed in the consultation chamber, as most of us can bear witness. But let a brother practitioner be summoned to appear in the courts upon a charge of malpractice, and the profession is at once up in arms; the error is now apt to lie in the direction of the opposite extreme. Exaggerated conceptions of fidelity to the common faith, possibly, also, the apathy, if not the active hostility of the public, sometimes induce the conscientious practitioner to condone an unpardonable sin against the laws of the art and science of medicine.

In this connection, it is of interest to note the

[1] JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 5 and 12, pp. 566, 599.

[2] The Lancet, May 5, 1888, p. 887.

views of Professor Heinrich Fritsch[3] respecting puerperal infection *in foro*. Fritsch propounds the question, identical with that suggested to the Medico-Legal Society. He writes: "A question that the judge addresses to the expert is the following: 'Do the operations or the omissions of the midwife stand in causal relation to the death of this puerpera?'" This question cannot be answered simply by "yes" or "no." At most, only the scientific conviction can be expressed that a causal nexus does exist. But the expert is never in a position to swear that except for the operations or the omissions of the midwife, the life of the puerpera would without doubt have been preserved. Fatal peritonitis may occur in consequence of the rupture of a pyosalpinx during the course of an otherwise normal labor; the possibility of purely accidental infection, in which the midwife plays no part, must be admitted.

The modality of the infection must be clearly established before the causal nexus can be looked upon as demonstrated. To establish the modality of infection, three data are to be supplied:

1. The source of the material of infection must be made clear.

2. The omission of disinfection must be demonstrated.

3. Any cause of death other than the puerperal disease must be eliminated.

In establishing the first point it is not necessary to demonstrate infection with puerperal poison only. A midwife was convicted who was suffering from an inflammation of the lachrymal sac. It was shown that contrary to the physician's orders she had attended women in labor without disinfection of her hands, and that during the confinements she had compressed the tear-sac with her fingers and immediately afterward introduced them into the parturient canal. American readers will recall the sad case of Dr. Rutter and his ozæna.

The omission of disinfection is not difficult to determine. Although, of course, the painful, rigorous antisepsis of Lister may not be insisted upon. In case of alleged disinfection the fact of such preparation at the bedside must be attested by competent witnesses.

The third point is elicited from the history of the case, the observation of the course of the disease, and the results of the autopsy.

In the concrete case of fatal puerperal fever, therefore, when the source of infection, the omission of disinfection, and the absence of any other cause of death than puerperal fever have been demonstrated, it is consistent with all the facts that there is a causal nexus between the operations and omissions of the midwife and the death of the puerpera.

It is evident that the general behavior of the midwife can have no influence upon the question of her guilt or innocence, but it ought to be considered in relation to the degree of her punishment.

Fleischmann[4] reports a clear case of puerperal infection by a midwife who had recently been in attendance upon a fatal case of puerperal fever. In urging the importance, in Austria, of stricter laws in the prevention of this disease, he quotes the wise provisions of Saxony—also of interest to us as germane to the subject under discussion.

The ordinance of March 28, 1885, in Saxony, is as follows:

"§17. When a lying-in woman delivered by a midwife becomes the subject of puerperal fever, the midwife is not permitted to attend the sick woman any longer. Neither can another midwife undertake the further care of the woman sick with puerperal fever.

"The midwife is not permitted to undertake the management of another case of labor within a period of five days, or even longer, reckoned by the district-physician from the day of her last visit to the sick woman."

Desirable, even urgently necessary as such laws certainly are, it is utopian to anticipate their enactment with us for many years to come. Little by little, however, the professional mind is becoming saturated with the notion of asepsis in the practice of midwifery, and we may confidently look forward to the ultimate realization of our hopes, even though it be in the "dim and distant future" of which Mr. Gladstone speaks.

Meanwhile, we venture to express the conviction that Fritsch's opinion upon the medico-legal aspect of puerperal infection will meet with general commendation. Certainly, it is a model of wisdom and moderation.

ABOUT THE SIZE OF A BEAN.

"A Puzzled Englishman" complains, in the *Philadelphia Medical Times*, of the loose statements in English and American medical literature as to the size of pathological objects. Such time-honored statements as "as about the size of a fœtal head," or "about the size of a millet seed," he thinks we can never hope to be rid of before the millenium. On one occasion his interest in a case was kept until it was stated (by the American writer) that something was

[3] Deutsche Medicinische Wochenschrift, Nr. 12, 1888, p. 228.

[4] Wiener Medizinische Wochenschrift, No. 13, 1888, p. 427.

"about the size of a dollar," when, inasmuch as he had seen only a gold dollar, his interest suddenly flagged. Again he was lost when he read that a tumor was "about the size of a doughnut." Doubtless most American physicians have been equally puzzled on reading that something was about the size of shilling or a half-crown.

Such unscientific comparisons are far too common in medical literature. We have often wondered if all the tumors removed in France are "as large as a fœtal head," and why those removed by German surgeons are uniformly either "as large as a fist," or "as large as a walnut."

How many of us have seen a millet seed, and how many have seen three fœtal heads of the same size. Doughnuts, as most of us know, are not made of a uniform size. What are we to infer as to the situation of a tumor or an incision, when we read that it was a few inches or a few finger's-breadth to the left of the sternum? Is it not about time that we adopt a standard size for fœtal heads, doughnuts, walnuts, hazel-nuts, and other standards of comparison, or else cease using such standards of comparison and begin to use such as scientific men everywhere can understand. Millimetres and centimetres are exact, and everyone knows what they are.

Would it not be well to have some uniform color standard? Such expressions as "café-au-lait," greenish yellow, etc., are often far too indefinite, *café-au-lait* being especially indefinite unless one be accustomed to the very best of coffee; the color of coffee and milk ranging from a very light brown or dark yellow to a dark reddish brown. Such indefinite expressions are very annoying to any one making or using color-tests in chemistry.

Another annoying method of indefinite expression is seen in the very loose statements of some writers concerning chemical compounds used. Such vague terms as "the oxide of mercury," or "the chloride of mercury" are unpardonable in a scientific communication, more especially when a chemical reaction is necessary. Too often, also, is there an ambiguity regarding the quantity of reagents to be used. Wendriner, for example, gives the following method for detecting antifebrin: When one adds a small quantity (how much, 2 or 10 grains?) of antifebrin to normal urine, then adds caustic soda (stick or solution, and how much?) so as to render the urine alkaline, and then distils, aniline is found in the liquid that has not passed off by distillation. The urine of patients taking antifebrin will not give this reaction. But this is due to the fact that the drug is decomposed in the organism. The urine, in this case (which case?), distilled in the presence of an acid, gives a large quantity of phenol, of which traces only may be found in the urine of persons that have not taken antifebrin (*Nouveaux Rèmedes*). A good chemist would have no difficulty in making this test; but good chemists are rare in the medical profession.

It should be the object of every writer to make his language so plain that it cannot be misunderstood. In the medical profession a great deal of life—may depend upon what is written. Much has been said on the subject of writing prescriptions in Latin. When one is writing a prescription that is to be printed it is better to use Latin than to use a vulgar or local name of a drug. Continental writers are especially prone to use local and vulgar names for preparations of plants, or else to distort the Latin name so as to make it almost unrecognizable. In Italian, French and Spanish literature it is very rare to find a prescription written in Latin, and it not infrequently happens that one has to look through half a dozen dictionaries or pharmacopœias in order to make an intelligent translation of one word. Doubtless foreign readers have, to more or less extent, the same cause of complaint of English and American writers, though naturally we cannot see our faults so well as others can. But it is a singular fact that the writers of the Romance languages use the Latin less frequently, by far, than do the writers of any other modern languages. In one of Simon's prescriptions for laryngismus stridulus we find *eau de tilleul* called for. *Tilleul* means a lime-tree, a linden. Turning to this word in a medical dictionary, we are referred to *tilia*, and find that the flowers of *tilia Europæa* "have been supposed to possess anodyne and antispasmodic virtues." Under *tilia Americana* we find that "a mucilage, prepared by macerating the inner bark in cold water, has been applied in burns." Thus far we have no clue as to what *eau de tilleul* is. Again we find a prescription calling for *carbonato de litina*; we can only guess that carbonate of lithium is what is wanted, for the best Spanish dictionary does not give *litina*.

But there is certainly one thing for which our foreign confrères may justly complain of English and American writers: they still adhere to grains, scruples, drachms, and ounces, and to inches, and common and vulgar fractions.

By all means let us have the proposed international pharmacopœia.

THE NEXT INTERCOLONIAL MEDICAL CONGRESS OF AUSTRALIA will assemble on January 7, 1889, and will rise on January 12.

VOLUNTARY MUTILATION BY PERFORATION OF THE MEMBRANA TYMPANI.

Dr. Justyn Karlinsky reports three rare and curious cases of voluntary mutilation, observed by him in the Roumanian Army. In the first case examination showed traces of traumatic lesions in the internal auditory meatus; but the functional symptoms were not justified by any lesion of the membrana tympani, nor of remainder of the ear. Simulation was suspected; lesions of greater or less extent were found at each examination, and finally the head of a phosphorus match was found in the secretions. There was no perforation of the drum-head in this case. In the second case there was perforation, with subacute internal otitis, caused by the introduction of a piece of unslaked lime, which was then moistened. Fragments of the lime were found in the auditory canal. In the third case Karlinsky found a large perforation with everted edges, which had been produced by a curved piece of iron wire. The patient had been in the habit of using this wire as an ear-pick, and it was somewhat uncertain whether the perforation was intentional or not.

EDITORIAL NOTES.

Epithelioma of the Clitoris.—It is well known that primary epithelioma of the vulva is a very rare disease. Richet recently operated upon a case at l'Hôtel-Dieu, and subsequently presented the case at a clinic. The patient was 40 years of age, had always had good health, her brothers and sisters were in good health, and her mother died at 90 years. The patient became pregnant when 23 years old, and was delivered of a dead child after having had a fall. Six months before entering the hospital she noticed a tumor on one labium majus, as she thought, but examination showed that on the lower part of the mons veneris was a tumor as large as a hen's egg, reddish, and with the well-known cauliflower arrangement of its lobes. The point of origin of the tumor was really the clitoris. Microscopic examination after removal of the tumor showed that it was an epithelioma.

Atomicity and Biological Action.—M. J. Blake has recently reported to the Académie des Sciences the results of a series of experiments on "The Relations between the Atomicity of the Inorganic Elements and their Biological Action." He claims that monatomic elements act on the pulmonary arteries; diatomic elements on the centres of vomiting and on the voluntary and cardiac muscles, except glucinium, which acts on the other nerve centres. The triatomic elements act on the respiratory, vaso-motor, and inhibitory centres, on the cardiac ganglia, and on the pulmonary arteries; and the tetratomic elements act on the respiratory and vaso-motor inhibitory centres of the cerebrum, on the spinal cord, the cardiac ganglia, and the pulmonary arteries.

Cocaine in the Diagnosis of Laryngeal Disease.—Baumgarten, of Buda-Pest, has found a new use for cocaine, based on its action in blanching hyperæmic mucous surfaces, catarrhal surfaces, and healthy mucous membranes. If the paleness does not appear after several applications, Baumgarten concludes that it is not a case of hyperæmia, but a tuberculous or syphilitic process that is to be dealt with.

The "Texas Health Journal," the first number of which has been received, for July, 1888, is a new 32 page journal of public health published at Dallas, Texas, under the editorship of Dr. J. R. Briggs.

The Association of Registered Medical Practitioners of South Australia was formed on April 3. Dr. Hayward, of Adelaide, is President, and Dr. A. A. Lendon, of Adelaide, Secretary.

Dr. Engelhardt, of Halle, has been made Professor extraordinary of Gynecology in the University of Jena, in place of Küstner, who has gone to Dorpat.

Dr Garrè, formerly Privatdocent in Basle, is now an assistant in the surgical clinic and Docent of surgery in Tübingen.

SOCIETY PROCEEDINGS.

GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, March 23, 1888.

The President, Henry T. Byford, M.D., in the Chair.

The President exhibited

TWO UTERI REMOVED PER VAGINAM FOR FIBRO-SARCOMA AND CARCINOMA RESPECTIVELY.

I have here two uteri which, as you see, are quite large to have been removed by the vaginal method. The first, which is the size and shape of a medium-sized orange, with the cervix hanging to it like a thickened stem, is a fibro-sarcoma. The entire organ is involved excepting a superficial layer of muscular tissue and peritoneum, and was ulcerated within so that the entire cavity was converted into a pus pocket. The uterus was curetted for fungosities 6½ years ago and 4½ years ago by an eminent obstetrician, 2

years ago by a prominent homeopath (for endometritis fungosa), and by myself four months ago. The patient is 47 years old, and has two children, one 28 years and the other 25 years old. The uterus is known to have been enlarged for 7 years. The chief symptoms have been metrorrhagia, muco-purulent, slightly offensive discharges and daily colicky pains.

The uterus was removed two months ago, and the patient, for the first time in years, feels perfectly well. I ligated the broad ligaments in the face of great difficulties. The right one was so much thickened (probably diseased) that it was practically inelastic, and was ligated *in situ*. The whole vagina was contracted like that of a virgin, and was so unyielding that it was lacerated slightly before it could be dilated sufficiently for work. The uterus, after having been cut loose, was delivered with great difficulty, and tore away some of the ligatures. Two compression forceps finally secured the bleeding points; they were left on for twenty-four hours. The iodoform tampon was removed at the end of week.

The other specimen is fully the size of a man's fist, and is an adenoma of the fundus and posterior wall which has undergone cancerous degeneration. The patient is 55 years old, anæmic, and has had several children, the youngest of whom is 17 years old. She ceased menstruating at 50 years, but soon after commenced to have a pinkish discharge, which has continued and increased ever since, and has lately been somewhat purulent and slightly offensive. She suffered with uterine cramps. On account of the size of the uterus I found it necessary to retrovert it in order to get at the upper portion of the broad ligaments. The operation was performed March 10th. Although pus escaped into the vagina from a rent made in the diseased posterior uterine wall by the tenaculum forceps used to aid in the retroversion, the recovery has been the same as after normal labor. The iodoform tampon was removed on the fifth day, and the first douche given.

DR. FRANKLIN H. MARTIN read a paper entitled

A REPORT OF FIFTEEN CASES OF FIBROID TUMORS OF THE UTERUS TREATED BY GALVANISM.

(The report including only the year's work of 1887.)

From Jan. 1, 1887, to Jan. 1, 1888, I applied galvanism in strong, accurately measured and definitely concentrated doses in gynecological cases over 1,400 times. During this time I employed galvanism for uterine fibroids 623 times in 15 cases. The result was as follows:

Not suitable for treatment and recommended for operation,	1
Benefited	4
Symptomatically cured	5
Absolutely cured	5

The author of the paper then selected and gave in detail the history and treatment of five cases, two of which were symptomatic cures, two actual cures, and the remaining case was benefited.

The following is a short sketch of each case:

Case 1.—Diagnosis: Large, painful, hæmorrhagic, interstitial, and subperitoneal fibroid tumor of the uterus, filling the pelvis and extending nearly to umbilicus.

Treatment: a large number of applications of galvanism given by three different methods of procedure, extending over a period of more than two years.

Result: benefited.

The above is a continuation of a history, cited as Case 10, in an article read by the author before the Section of Obstetrics and Diseases of Women, at the thirty-second annual meeting of the American Medical Association, at St. Louis, May 5, 1886.

Miss C., unmarried, age 26, consulted me on account of large abdominal tumor. Upon examination I found a large abdominal tumor attached, as I then thought, to the whole anterior wall of the uterus, crowding that organ away from the bladder. I have since ascertained that the portion previously diagnosed as the uterus is simply the cervix, the uterus being lost in the mass of the tumor, and its canal traversing its entire depth. The tumor was ovoid, smooth, and easily movable under the abdominal walls, about seven inches in its long, and six inches in its transverse diameters. The growth was increasing in size rapidly.

This patient then received in turn thorough trials of the iodine and glycerin treatments, ergotin treatment, and, as a last resort, surface applications of galvinism were made. This latter, thoroughly carried out, checked the growth, and markedly reduced the size of the tumor. This was found, however, to be of a temporary nature, the growth enlarging rapidly at all times except when under treatment. With an idea of getting more marked results, abdominal galvano-puncture was at last resorted to. In September, 1886, four operations were performed in intervals of ten days. The patient was anæsthetized and a steel needle, four millimetres in diameter, with a trocar point, insulated with hard rubber, to within three centimetres of the point, attached to the negative pole of the battery, was thrust through the abdominal wall into the thickest portion of the tumor. A large animal membrane electrode was placed upon the abdomen in close proximity and attached to the positive pole of the battery. A current of 200 milliampères was turned on and allowed to pass for fifteen minutes. The effect of these operations was a rapid diminution in the size of the tumor. The patient was advised to await futher developments. At the end of two months she returned, stating that the growth of the tumor had recommenced, the hæmorrhage being excessive.

Dreading the necessary risk attendant upon abdominal puncture, and having at this time successfully treated a number of cases by Dr. Apostoli's method, I determined to adopt that safer and, in my opinion, much more effectual means in this case. Therefore, in January, 1887, regular treatment was instituted, consisting in the introduction of an intra-uterine platinum electrode to the bottom of the uterus, which was found at this time to measure eighteen and a half centimetres, or seven and a half inches in depth. To this electrode was attached the negative pole of the battery, and the circuit was completed by the use of the membraneous abdominal electrode. Seven treatments were given by the 1st of February, when menstruation appeared. The first four of these

seven treatments were of the negative intra-uterine, the last three of the positive intra-uterine variety. The highest current borne by the patient was fifty milliampères. The following menstruation was free from pain, but hæmorrhage was as excessive as ever. No change in tumor.

February. Four treatments were given in this month, all negative intra uterine, with no apparent result on tumor or amount of hæmorrhage at next menstruation. No pain at menstruation.

March. Two treatments, negative intra-uterine of about fifty milliampères strength. The hæmorrhage at the next menstruation caused considerable exhaustion, but was accompanied with no pain, nor was there any change in the tumor.

April. Eight positive intra-uterine treatments were given, with a view of modifying, if possible, the excessive menstruation. The patient at this time was able to tolerate without discomfort a current of as high intensity as one hundred milliampères. The hæmorrhage of the next menstruation was not materially decreased, the tumor showed signs of reduction—the uterus measuring sixteen centimetres. I was puzzled at this time to get some means of checking the exhaustive menorrhagia. I was convinced that the current tolerated was not sufficiently strong to produce the desired coagulating effect upon the whole surface of the endometrium in contact with the long internal platinum electrode. The current, in other words, was not concentrated enough at any one point of the electrode to produce its characteristic coagulating effect, sufficient to check hæmorrhage. I, therefore, modified Dr. Apostoli's method, by instituting a means of internal concentration. This was accomplished by devising my flexible internal electrode, with a given active surface, which, acting only on a comparatively small portion of the endometrium at one time, would enable me in several treatments to successively apply to the whole surface of the uterus a current of sufficient concentration to accomplish the desired results. The electrode adopted in this case was three millimetres in diameter, and had an active surface of four square centimetres, and the current used with this was at all times to be one hundred milliampères, passing for five minutes.[1]

May. Five positive intra-uterine treatments were given in this month with my new electrode. At the first application the active portion of the electrode, the distal end, was introduced to the bottom of the canal, a gauge on the staff of the sound marked the distance to which the instrument entered the womb. At the next treatment the gauge was placed so that the active portion of the electrode would just reach the point acted upon by the former treatment. The same principle was carried out until every portion of the canal had been operated upon by the concentrated current. Five treatments were given before the next menstruation. The effect was magical. The flow lasted but three days. No pain.

June. Four treatments early in month were given with the concentration electrode as the native pole. The patient at this time left city for three weeks.

July. Thirteen treatments were given, first six negative, seven positive. Tumor decreasing in size. Depth of uterus fifteen centimetres. Menstruation lasts four days and is normal in quantity.

August. Five treatments, negative.

September. Six treatments, four negative and two positive. Measurement of abdomen was made at this time, and over the most prominent part of tumor was thirty-seven and a half inches.

October. Six treatments, all negative. Menstruation still remains scanty. Gain in flesh and improvement in general health.

November. Nine treatments, three before menstruation, and six following, all negative intra-uterine.

December. Five intra-uterine negative treatments.

Although there has been a general gain in flesh since last measurement made, the patient measures two inches less or thirty-five and a half inches. Depth of uterus fourteen centimetres or five and a half inches.

Thus this patient in one year has gained in flesh, in strength: has normal menstruation instead of menorrhagia, and is perfectly free from pain. The uterus has been reduced from seven to five and a half inches in depth, and the mass of the tumor is reduced fully one-third in size. Patient still under treatment.

Case 2.—Diagnosis: Myofibroma of the fundus of the uterus enlarging the whole organ.

Treatment: Thirty-two applications of galvanism.

Result: Cure.

Mrs. D., æt. 24, married two years, wife of a mechanic, no children or miscarriages, presented herself for treatment March 23, 1887. Menstruation commenced at 14; at present irregular, and for five days excessive; is accompanied with headache, and is followed by severe neuralgic pains. Bowels constipated; hæmorrhoids; leucorrhœa, but not excessive; frequent and painful urination.

Objective symptoms: Vagina small. Cervix large and patulous. Uterus large with canal taking the direction parallel with the axis of the body, and measuring eleven centimetres or a trifle more than four inches in depth. I was assisted by Dr. Wunismark in the treatment of this patient.

Thirty-two applications were given this patient by means of the concentration electrodes with a current of one hundred miliampères at each sitting.

The effect of the treatment was noticed in the behavior of the first menstruation, the flow having been modified in quantity and was without the slightest pain. The last treatment left the uterus seven centimetres in depth, normal in contour, with no evidence of a thickened fundus. The patient who had previously been anemic in appearance, is now full-blooded, in the best of health. Discharged cured.

Case 3. — Diagnosis: Painful, bleeding fibromyoma in anterior wall of uterus.

Treatment: Galvanism—thirty-nine treatments.

Result: Improvement in general health and reduction of the growth. Menorrhagia cured and pain at menstruation relieved.

Case 4.—Diagnosis: Large, painful, bleeding myofibroma of the uterus filling the pelvis and abdomen.

[1] See Medical Record, December 17, 1887.

Treatment: One hundred and fourteen applications of galvanism by Apostoli's method.

Result: Symptomatically cured, pain and menorrhagia relieved, tumor diminished in size, and patient restored to health.

Case 5.—Diagnosis: Large, painful hæmorrhagic, interstitial and subperitoneal fibroid growth of the uterus completely filling the pelvis and lower portion of the abdomen.

Treatment: Thirty-eight negative intra-uterine, galvanic applications and eleven positive intra-uterine by Apostoli's method.

Result: Tumor reduced one-third, hæmorrhage modified, pain relieved.

Case 6.—Diagnosis: Hæmorrhagic fibromyoma of posterior wall of fundus increasing uterus to ten centimetres in depth.

Treatment: Sixty-two applications of galvanism by Apostoli's method, by means of my flexible concentration electrodes.

Result: Growth absorbed, the uterus being reduced in depth to seven centimetres. Hæmorrhage relieved and patient completely restored to health.

Case 7.—Diagnosis: Large, painful hæmorrhagic myofibroma of the uterus filling pelvis and lower abdomen.

Treatment: Thirty applications of galvanism.

Result: Symptomatically cured. Uterus reduced in depth from nineteen centimetres to sixteen centimeters. Tumor markedly reduced. Menorrhagia cured and great improvement in flesh and strength accomplished.

Case 8.—Diagnosis: Myofibroma of the right horn of the uterus increasing the depth of the uterus to eight centimetres.

Symptoms: Excessive hæmorrhage, accompanied and followed by excruciating pain that remained for ten days following menstruation.

Treatment: Sixty-two applications of galvanism by Apostoli's method, modified by the use of my intra-uterine concentration electrodes.

Result: Cure.

Case 9.—Diagnosis: Large, interstititial, hæmorrhagic, painful fibroid growth extending to within two inches of the umbilicus and causing enlargement of the uterus.

Treatment: Thirty-seven intra-uterine galvanisms—twenty negative, seventeen positive.

Result: Reduction of growth fully one-third. But little relief of hæmorrhage or pain up to the present time.

Case 10.—Diagnosis: Large, subperitoneal fibroid growth, about eight inches in its long, and four in its shorter diameter, with irregular contour attached to the entire fundus and posterior wall of a slightly enlarged uterus.

Symptoms: Distressing pressure upon rectum, bladder, and general complaint of heaviness in pelvis with "bearing-down," and difficulty in locomotion. Menstruation profuse and painful. General health impaired.

Treatment: Thirty-five applications of galvanism.

Result: Symptomatic cure.

Case 11.—Diagnosis: Interstitial, painful hæmorrhagic myo-fibroma of the anterior wall and fundus of the uterus increasing its depth to eight and one-half centimetres or three and one-half inches.

Treatment: Thirty intra-uterine applications of galvanism.

Result: Benefited. Depth of uterus reduced to two and one-half inches, general health improved, menorrhagia modified, and pain relieved.

Case 12.—Diagnosis: Large, hæmorrhagic, interstitial and subserous fibroid growth of the uterus increasing the depth of the organ to fifteen centimetres or nearly six inches.

Treatment: Twenty-one applications of galvanism by Apostoli's method as modified by myself.

Result: General health restored, hæmorrhage checked, pain and pressure in pelvis relieved, tumor reduced one-third, and depth of uterus decreased to thirteen centimetres. Patient still under treatment.

Case 13.—Diagnosis: Myo-fibroma of the anterior portion of the neck and body of the uterus, three inches in diameter. Uterus not materially changed in depth, three and one-quarter inches.

Symptoms: Menstruation profuse, but not excessive; much pain during latter part of flow. Frequent and difficult urination.

Treatment: Sixty-one applications of intra-uterine galvano-negative treatment by my modification of Apostoli's method. Result: Cure.

Case 14.—This case was found, after a few treatments had been given, not suitable for this method of procedure. A submucous mass from the interior of the fundus of the womb gradually filled the uterine cavity, and when I discovered it was pedunculated. I advised her to return to her home and have it removed by a surgical operation. The operation was successfully accomplished by Prof. Mann, of Buffalo, N. Y.

Case 15.—Diagnosis: myofibroma of fundus and posterior portion of uterus, accompanied with menorrhagia.

Treatment: twenty-three intra-uterine applications of galvanism by Apostoli's method as modified by me.

Result: cure.

DR. P. S. HAYES: The point has been well discussed and there can be little further said. It occurs to me, however, that there may be a reason why the positive electrode used in the uterus is more hæmostatic than the negative, and that is on account of the cicatrix which follows the use of the positive electrode being more prone to contract; the cicatrix following the negative being like the cicatrix of a burn with caustic alkali. From my own experience in the use of electrolysis I find frequently that, at the time of operating, there is a slight hæmorrhage, or at least an oozing of bloody serum, more likely to follow the use of the positive than the negative pole, especially if any other than a platinum electrode is used. The destruction of tissue around the positive pole is not nearly as great as that around the negative, the oxygen is separated around the positive pole and the acids are liberated, and I find the eschar which follows essentially the one produced by the action of the strong mineral acids on albuminous tissue. On the other hand, if the negative pole is used,

we find that the destruction of tissue extends probably twice as far from the electrode. The appearance is entirely different, that from the negative pole looking very much as though it had been frozen, and the scar tissue which results from the use of the negative pole does not contract as firmly as does that which follows the positive, and it seems to me that this can be explained to a large extent by the chemical action which takes place along the electrodes. There are two, and possibly three factors present in this method of using electricity: there is the physical effect, due of course to the liberation of the gases around the electrodes; there is the chemical effect due to the electrolysis or separation of the salts of the body into the acids at one pole and the alkalies at the other; and then there is the physiological effect, which we do not understand as well as we do the chemical and physical effects. Whatever be the amount of chemical action which takes place around the pole that is in the uterus, an equivalent amount of chemical action takes place under the electrode that is placed on the abdomen, and almost invariably you will find an irritation of the skin, and you may possibly get a blister within the circumference of the electrode, so that on the second or third day you will find that it is difficult to apply the electrode where it was first applied. That the electricity, as it passes through the tumor, affects the cell life, is a question yet to be proven, and I think the determination of the matter can be considered almost entirely due to the peculiar chemical action which takes place around the electrode.

DR. E. J. DOERING: I would like Dr. Martin to make an explanation about the strength of the current which can be used. There seems to be considerable difference of opinion among gentlemen in various parts of the country.

DR. FRANKLIN H. MARTIN: The question is a difficult one to answer in the time I have at my disposal, but I would say briefly that, with the means of concentration that I have adopted in my intrauterine flexible electrodes, a current of from 50 to 100 milliampères is all that is necessary in order to obtain all the benefits of this treatment. Without these electrodes, however, and by the original Apostoli method, I have employed currents ranging from 100 to 1,000 milliampères, and this without any detrimental effects.

(To be concluded.)

GNYECOLOGICAL SOCIETY OF BOSTON.

HERBERT J. HARRIMAN, M.D., SECRETARY.

Stated Meeting, February 9, 1888.

THE PRESIDENT H. C. WHITE, M.D., IN THE CHAIR.

DR. C. W. STEVENS read a paper on

CORROSIVE SUBLIMATE INTERNALLY IN PUERPERAL AND OTHER SEPTICÆMIAS.

(See page 615, THE JOURNAL, of May 19.)

DR. A. P. CLARK said that he had had no experience in the use of corrosive sublimate in the way recommended by Dr. Stevens. His usual course was to remove all clots and placenta as thoroughly as possible, using the curette if necessary in cases of abortion. Quinine, antifebrin, antipyrin and similar agents were used as indicated. Dr. Clark has been shy of intra-uterine injections of late years, believing that their use is unnecessary and dangerous. For a local application he uses tr. of iodine, upon a cotton-wrapped applicator.

DR. A. E. MCDONALD had never tried the mercuric bichloride in puerperal septicæmia, but had used it with great satisfaction in the treatment of diphtheria, giving doses of $\frac{1}{32}$ of a grain of the drug until characteristic diarrhœa appears. With this treatment is combined the use of quinine.

He had, however, used iod. salicylat. in puerperal septicæmia with apparent benefit. He usually orders 3j of the drug in an ℥j of the vehicle and directs that 3j be given every three or four hours.

DR. SAMUEL N. NELSON said: The use of antseptics in puerperal fever seem to me a necessity, but I think that the chief advantage to be derived is from their employment locally, and when used systematically they have little if any perceptible effect. When they do have any effect I cannot believe it due to their antiseptic qualities as such. This is particularly the case when the question is concerning corrosive sublimate, of which the dose compatible with safety is very minute, particularly in proportion to the weight of the body of an adult. Note the dose advocated by the reader, viz.: $\frac{1}{96}$ of a grain at the beginning every three hours, which may be increased to $\frac{1}{48}$ of a grain. Dr. Ernst is quoted as authority for the statement that corrosive sublimate in the proportion of 1 to 10,000 will restrain the growth of microorganisms, and this is cited as the reason for giving the drug in the above mentioned dose. Does it fulfill the conditions? With the larger dose mentioned ($\frac{1}{48}$ grain every three hours) only $\frac{1}{16}$ grain is taken in twenty-four hours, and if for convenience we estimate the average weight of an adult at 100 lbs. or 700,000 grains in round numbers (which is below the actual figure) we find that the proportion of medicine taken in the whole twenty-four hours to the weight of the body is 1 to 4,200,000, which is only $\frac{1}{420}$ part of the proportion cited as authority for the dose. In point of fact, Dr. Ernst falls far short of the mark, when he says that a solution of corrosive sublimate 1 to 10,000 restrains the growth of microörganisms. Many years ago Koch and Sternberg showed that the solution 1 to 10,000 would kill them when exposed for two hours. And at least four years ago I reported to this society a series of experiments in which I showed that the solution 1 to 10,000 killed the germs in five seconds in every one of several experiments. And although I have not investigated further, I believe that a much weaker solution will kill them in this exceedingly short time. Moreover, considerable larger doses of corrosive sublimate than has been recommended can be borne. Pepper recommends, if I remember the figures correctly, doses of $\frac{1}{24}$ to $\frac{1}{16}$ of a grain every two hours for children of about five years old sick

with diphtheria; and used thus, he considered it almost a specific. In the spring of 1884, when ill with a severe attack of diphtheria, I took a grain of corrosive sublimate every day for a week in addition to frequent gargling with a 1 to 1,000 solution—and I am alive to tell the fact. When taking a grain a day, I took only about one to one-millionth part of my own weight, and even this proportion is much too small to think that good effects can come from the use of the drug on account of its antiseptic properties as such.

The advantages of antisepsis locally, however, should not be over-looked, and here I should place corrosive sublimate at the head. He who has made an autopsy after death from puerperal fever, and seen the whole interior of the large non-involuted uterus, a stinking slough will appreciate the need of action here. All that can be easily removed should be removed, and frequent irrigations of corrosive sublimate solution 1 to 1,000 should be employed. How much better, however, an antiseptic delivery, and hence a normal recovery!

If corrosive sublimate has any effect in shortening or curing the disease when taken into the system, I believe that we must find some other explanation than its antiseptic properties, and if repeated trials show good results it is most certainly a valuable remedy, and I hope to hear further reports concerning it.

DR. H. C. WHITE said that in the computation given by Dr. Nelson, showing the relative weight of the antiseptic compared with the body weight, the solid tissues should not be considered, as they are not invaded. Only the fluid constituents of the body, such as the blood or serum, should be reckoned.

He was much interested in the use of antiseptics internally in such cases, and hoped that good might come from such use. The routine use of intra-uterine injections by the average physician is a source of danger and should be discouraged. In the puerperal state nature provides proper treatment, and the woman ought to be left alone as regards any interference with the genital tract. Heat is the best disinfectant, and should be applied to the hands and all cloths and garments used about the patient. Dr. White has used one drug more than any other in the diseases in which septic conditions may arise, namely: sulphurous acid. This drug has always answered all reasonable expectations. The failure of the remedy in other hands may be due to its poor quality. The preparation must be *fresh*, as otherwise the gas will escape and the medicine become inert and valueless. But few druggists can be relied on to provide always a fresh and efficient preparation.

DR. GEO. W. NASH, a guest of the Society, said that at the Rotunda Hospital, Dublin, the practice in cases of puerperal septicæmia was to thoroughly wash the uterus with a 1–20 solution of acid. carbol. He had never seen hydrarg. chlorid. used there in such cases.

DR. E. W. CUSHING said he had not arrived in season to hear the paper read and could only judge it from its title. He was not disposed to assign much value to corros. sublim. used as suggested. It is impossible to tell, in the present state of our knowledge, in just what form the germicide enters the blood and in what way it is eliminated. When corros. sublim. is mixed with blood in a test-tube it forms at once an albuminate of mercury. The only way, however, to settle the question as to the efficacy of the drug in septic troubles, will be to pile up cases and thus arrive at the facts. Dr. Cushing's practice in these cases was to thoroughly scrape out the uterus under antiseptic precautions and then to thoroughly wash it out. The disorder is undoubtedly due to bacterial infection, and in all the cases dying in Vienna of puerperal infection during his stay there was found the same forms of bacteria which we find in wound infection. A bad smell is no criterion by which to judge of the danger. The most virulent bacteria are odorless. Our hope in these cases of puerperal infection is in being able to remove all the offending matter. When the infection has spread beyond the uterus and thrombi have formed in the veins of the broad ligament, little can be anticipated from any kind of treatment. Hydrarg. bichlorid. may be given hypodermically with safety.

DR. F. D. BURT said that he had the feeling that the corrosive chloride internally is of no use in septicæmia. The usual practice has been described by Dr. Cushing, but the greatest difficulty lay in removing all the offending matter. In accomplishing this object the use of the swab is much more efficient than intra-uterine injections as ordinarily used. The simple current of the solution has but little detergent power over decomposing shreds of tissue which may be attached. By the thorough use of a swab, however, these offending tissues may be more successfully removed.

DR. W. SYMINGTON BROWN said that he was deadly opposed to the use of corros. sublim. in any manner. It is the most easily decomposed and most dangerous of any of the mercurial preparations. The chemical changes which it undergoes when entering the blood prevents its reaching the germs of disease. Whatever good effect results from its use probably arises from its alkaloid action. Dr. Brown believed that washing out the uterus was not the best and most efficient way of cleansing that cavity, but that the use of the swab was much more effective. He always used tr. iodinii as a local application on the swab. From the use of corros. sublim. forty or fifty cases of dysentery have been reported, and this fact shows its highly dangerous character.

DR. C. W. STEVENS, in closing the discussion, said that in puerperal septicæmia there was a natural tendency to diarrhœa, but that the use of the corrosive chloride in small doses did not increase the trouble and was not dangerous. He had never kilogrammed his patients to find the exact proportion between the dose and body weight, but had formed his favorable opinion of the drug entirely from clinical results. This use of the drug is a resurrection of a former mode of practice, and may prove to be of value in septic troubles.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, February 8, 1888.

THE PRESIDENT, THOMAS C. SMITH, M.D., IN THE CHAIR.

DR. ROBERT T. EDES read a paper on

IDIOPATHIC ANÆMIA.

(See page 648.)

DR. REYBURN'S experience in this field had been very limited, as he had only had one case in the past six years. The woman having been treated by a number of physicians without any benefit, finally fell into his hands. She was emaciated to an extreme degree, and had palpitation. He could not trace the cause. As a last resort he tried Mitchell's method of forced feeding. She was confined to bed, was given six pints of milk daily; massage was applied; she recovered. This was a well-marked case. He would ask Dr. Edes as to the treatment in his case.

DR. EDES had not dwelt much upon treatment. A great majority never recover. He depended, however, upon arsenic and feeding. Nearly all the cases which have recovered have done so under arsenic. In his cases there was not forced, but rectal feeding One of the first things to suggest itself in the treatment was, of course, transfusion, but experience had shown this to be of very little value in the treatment of idiopathic anæmia, and often worse than useless.

FOREIGN CORRESPONDENCE.

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Microbes of Epidemic Dysentery—Smokers' Vertigo—Antipyrin in Labor—Glycerin as a Purgative Enema.

At a recent meeting of the Academy of Medicine, M. Cornil, on behalf of MM. Chantemesse and Fernand Vidal, read a note on the *microbes of epidemic dysentery*. He added, as a conclusion, that the presence of the bacillus discovered by these observers in the intestinal parietes, the mesenteric glands and the deep organs of a man having succumbed to an acute attack of dysentery, the observation in the stools of five dysenteric patients, its absence in the stools of men in health, the lesions which it gives birth to in the intestine and the viscera of guinea pigs experimented on, plead in favor of its specificity. M. Le Roy de Méricourt, an old naval surgeon, observed that two medical men of the navy described, ten years ago, the microbes of the diarrhœa of Cochin-China, considering them the pathogenic agents of this malady, but their discovery has not proved of any consequence in a therapeutical point of view. As regards epidemic dysentery the speaker observed that he could with difficulty admit its microbian origin, dysentery not being contagious, as was demonstrated by observations that he had occasion to make, whether in his long voyages on board men-of-war ships, or at the Maritime Hospital of Brest, where he had numbers of cases of dysentery under his care. M. Rochard, another old naval surgeon, concurred with M. Le Roy de Méricourt on the non-contagiousness of dysentery, of which he had observed several cases having divers degrees of gravity. He thinks that the microbian or non-microbian origin of this malady is not demonstrated, at least clinically. To this M. Cornil made the remark that the presence or absence of microbes does not necessarily imply the transmissible or non-transmissible character of a malady. For instance, he said that leprosy is distinctly a microbian malady, and yet its contagious nature is nothing less than demonstrated. For M. Cornil, all the chapters of general pathology relative to contagion, infection, endemicity, epidemicity, require to be rewritten with new elements, and in keeping with the discoveries of modern science. M. Le Roy de Méricourt expressed satisfaction at having heard M. Cornil declare that all microbian maladies are not necessarily contagious. This declaration, he said, was necessary if it were only to appease the public mind, which is imbued with the idea that contagiousness is inseparable from the microbian nature of a malady. Thus, for instance, there are many persons who would not have their children vaccinated with human vaccine lymph for fear of tuberculosis being transmitted to them. M. Cornil responded that the microbe of tuberculosis had never been met with in vaccinal virus; there is therefore nothing to be feared in this respect, though this should not prevent every precaution of prudence being taken in the choice of vaccine subjects.

At a previous meeting of the Academy, Dr. Decaisne read a note entitled: "The Vertigo of Smokers." The author formulated the following conclusions based upon observations of 63 inveterate smokers presenting different degrees of vertigo more or less frequent, more or less accentuated: 1. Of the 63 subjects of from 29 to 66 years of age, 49 were aged from 50 to 66 years. 2. More than half presented besides, other digestive troubles, alternations of constipation and diarrhœa, dyspnœa, exaggerated urinary secretion and sweats more or less abundant, insomnia, and palpitations. One-third had intermissions of the pulse and granulous angina, some of them had emphysema, aphthæ, amblyopia, spitting of blood. One hundred and thirty-seven cases referred to young smokers in whom the vertigo was produced almost always in the morning. 4. The occurrence of vertigo coincided, in one-third of the cases, with the suppression of profuse sweats and a marked diminution of the urinary secretion. This phenomenon may be easily interpreted by all physiologists. 5. Sometimes the symptoms of the vertigo of smokers have been confounded with that of cerebral congestion and even of diseases of the heart. This error of diagnosis may lead to the most serious consequences, and the author knows at least of one case that came under his notice who died after having been copiously bled for vertigo supposed to have been caused by cerebral congestion, whereas the real cause of death was attributable to excessive tobacco smoking. The author explains that in nicotic intoxication there is at

first contractions of the blood-vessels, which produces vertigo, then, the reaction supervening, the same vessels become dilated, this is the period of congestion. 6. The treatment of the vertigo of smokers which Dr. Decaisne has always employed with success consisted in the absolute suppression of tobacco, and the regulation of the habits of the patient. In 28 cases, while the patients were under the influence of vertigo, hypodermic injections of ether were employed which removed it in a few minutes. 7. Of 37 subjects who smoked on an empty stomach, the vertigo disappeared in 33 who took to smoking after meals.

Dr. Laget, of Marseilles, lately related at the Société de Biologie that he had employed *antipyrin in a case of premature confinement*, in the second stage of labor when the pains which were very severe rendered the uterine contractions of but little efficacy. Two successive doses of antipyrin of two grams each rapidly reduced the pains and, as a consequence, produced a regularity of the uterine contractions the strengh of which was in nowise diminished.

The *Courrier Médical* publishes a note of Dr. Arnacker on the advantage of *glycerin as a purgative enema*. The author employs only 50 drops of glycerin which are injected into the rectum by means of a syringe with an olive-shaped nozzle. This injection produces a purgative effect very rapidly, and the explanation of the action of the glycerin in this case is the attraction that it exerts on the watery part of the blood. The result is an exaggerated repletion of the vessels of the lower portion of the large intestine causing a peristaltic action, and finally diarrhœic stools. A. B.

DOMESTIC CORRESPONDENCE

LETTER FROM BOSTON.

(FROM OUR OWN CORRESPONDENT.)

The One Hundred and Seventh Anniversary of the Massachusetts Medical Society.

The Massachusetts Medical Society, which celebrated its centennial anniversary seven years ago, will meet in Boston June 12 and 13, 1888. The meeting promises to be of rather exceptional interest, judging from the titles of the papers that are expected to be presented. Huntington Hall in the Institute of Technology building on Boylston St., which has so admirably served for several years past, has again been selected as the place of meeting.

At 2 P.M. on the first day, Tuesday, June 12, the following papers will be read:

Private Mental Sanitaria and the Inebriates.—By Austin W. Thompson, M.D., of Northampton.

Therapeutic Nihilism.—By Maurice D. Clark, M.D., of Haverhill.

Uterine Displacements and their Influence on the General Nervous System.—By Francis H. Davenport, M.D., of Boston.

The Modern Practice of Surgery.—By Otis K. Newell, M.D., of Boston.

The Treatment of Hypertrophy of the Prostate with Special Reference to Operative Measures.—By Francis S. Watson, M.D., of Boston.

A Study of Phthisis and Pneumonia in Massachusetts; Statistical and Climatological.—By W. Everett Smith, M.D., of Boston.

The one hundred and seventh annual meeting will be held at 9 A.M., on the second day, Wednesday June 13. After the transaction of the annual business the following papers will be presented:

Postural Treatment of Constipation.—By Edward T. Williams, M.D., of Roxbury.

The Surgical Treatment of Malignant Growths.—By Maurice H. Richardson, M.D, of Boston.

The Value of Corrosive Sublimate as a Practical Disinfectant.—By William B. Hills, M.D., of Cambridge.

After the introduction of delegates the annual discourse will be delivered at 12 M. by B. Joy Jeffries, M.D., of Boston, during the reading of which the hall doors will remain closed.

At 1 P.M. The anniversary chairman and invited guests will meet the Fellows of the Society at a reception and banquet to be held at the Hotel Vendome. In pursuance of a time-honored custom the Fellows, in the order of their Seniority, will walk in procession from the hall to the hotel. No person will be admitted without a ticket. These are to be distributed to those Fellows who have paid their dues for the current year.

During Tuesday and Wednesday, at the Institute of Technology, there will also be an exhibition of drugs, chemicals, pharmaceutical preparations, foods, surgical instruments and appliances of all kinds, apparatus relating to hygiene, and books. N.

DOUBLE VAGINA.

Dear Sir:—The following interesting case of double vagina came under my observation May 2, 1888: Mrs. L. C., æt. 23, had been in labor six hours. I found a breech presentation and the os uteri dilated sufficiently to admit three fingers. As the finger was introduced for the purpose of making the examination nothing abnormal was discovered in the vagina. But before withdrawing the finger, on sweeping it from side to side, it seemed to enter a kind of pocket to the left. A careful exploration then revealed a vertical septum, dividing the vaginal canal into two nearly equal lateral halves. Its thickness would average about one-eighth inch; its breadth was about two inches from above downward. Near the cervix uteri it was incomplete, permitting the finger to pass through from one side to the other, thus at first giving the impression of a pocket, as above described. After the cervix became fully dilated, this septum, in order to gain more room, was divided with blunt pointed scissors. The labor was then completed without further accident. The patient had but one uterus and one cervix, and was not before conscious of ever having had more than one vagina. H. MOULTON, M.D.

Stuart, Iowa, May, 1888.

A REPLY TO "COUNTRY PRACTITIONER."

Dear Sir:—The letter of your correspondent, "Country Practitioner," in your issue of May 19th, implies a somewhat common misunderstanding of the position of those who believe and teach that the discovery of Semmelweiss was both radical and vital. So far as this reply is concerned, it is immaterial whether he believes what his letter implies, or whether he has simply taken the occasion which the absurd performance reported allows, for clever ridicule and irony. The misapprehension to which I refer is, the the impression that a careful compliance with the established principles of asepsis will secure only a diminished *mortality* in puerperal cases. The fact being that the claim is that thorough asepsis will secure also an increased number of puerperal cases in which no abnormal rise of temperature occurs, and that an obstetrician may have failed to secure all that he ought to secure in many of his cases which do not die. In other words, mortality statistics alone, although they are ample, are not a sufficient test of the principles of aseptic and antiseptic obstetrics.

Your anonymous correspondent is evidently bright enough to know all this, and hence this reply is not directed against him, but rather as a counter influence against the carelessness which the tone of his letter may induce in a less intelligent or less careful accoucheur or nurse, and thus cost some poor woman, if not her life, many days of unnecessary fever.

ELBERT WING, M.D.

3266 Cottage Grove Ave.

RUPTURE OF THE FUNIS.

Dear Sir:—Seeing in THE JOURNAL of April 21, a report from Dr. Duncan, of West Point, Miss., of a ruptured funis, in which he speaks of the rarity of the accident, I conclude to report this case:

On March 3, 1888, I was called to Mrs. L., in her fifth confinement, having pains one in three to four hours. An examination showed the os very high, in fact out of reach. I gave morphia gr. ¼, bromide potash gr. x. I returned in eight hours; found bearing down pains, and the head had reached the perineum, but receded after each pain. After watching this movement for an hour I applied forceps, and used considerable force. I felt a snap, and the woman jumped, but the child was born immediately, and I found the cord broken about one inch from the navel. It was wrapped about the neck and shoulders of the child until it seemed impossible for it to have been born without the rupture of the cord, which was of usual length.

Both mother and child did well.

P. C. YATES, M.D.

Neosho, Mo., April 25, 1888.

JUST RETRIBUTION.—A man with a sore arm went into a Grand Rapids drug store the other day and asked what was good for it. The druggist, who thinks he knows a thing or two about medicine himself, took the man behind the prescription case, gave the arm a critical examination, and mixed up a healing liquid. Then the man took his arm and went away, and the learned apothecary went to his till and found that over $50 of his good, hard money had been stolen. The man with the sore arm evidently had a pal whose arm was not sore.

BOOK REVIEWS.

A TREATISE ON DISLOCATIONS. By LEWIS A. STIMSON, B.A., M.D., Professor of Clinical Surgery in the University of the City of New York, etc. 8vo, pp. 539. Philadelphia: Lea Bros. & Co. 1888. Chicago: A. C. McClurg.

This work is supplementary to the one on Fractures issued five years ago by the same writer. The work has been divided into two treatises, properly enough, and in the interval one edition of Hamilton's standard work has been given to the public.

The work of Prof. Stimson will be examined everywhere with interest, if for no other reason than because it is several years later than any similar textbook. The delay in publication is caused by the great amount of clinical material collected and used in its preparation.

Hamilton's cases are chiefly selected and illustrative, with no claim to statistical fullness, and are almost solely taken from American sources. Prof. Stimson's work aims at a much fuller citation of foreign and American cases, and at the same time is marked by less of the writer's own individuality.

The *Index Medicus*, Index Catalogue of the Surgeon-General's Library, and the numerous standard treatises and encyclopædias, have been searched and copious references made from, bringing the work down to the present as far as is possible. As to dislocations no very important changes in surgical practice have occurred within a decade, so that the most recent treatises differ but little in essential points from those somewhat older. English and American surgeons have been, and still are, the undisputed masters of this mechanical branch of the art, as well as of orthopædic surgery. Standard treatises in all European languages contain, with little variation, the descriptions and illustrations of Sir Astley Cooper, Bigelow and Hamilton which have become familiar by their reappearance in nearly every surgical treatise in the English language.

The original steel plate engravings in Cooper's work on dislocations, now over a hundred years old, are marvelous for their fineness and perfection of drawing. These pictures, reduced in size, have been copied into every important work until the present day. The same is true of the illustrations taken from Bigelow's later work, *The Hip*.

Prof. Stimson has very properly sacrificed artistic effect to progress and left out all of Cooper's pictures which illustrate the antiquated method of reduction by pulleys. Bigelow's drawings to the number of twenty are introduced, and numerous others, few of them original, are incorporated in the same chapter. The desire to make a complete and systematic treatise has led to subdivisions of theoretical rather than clinical importance. Several chapters are devoted to different forms of dislocation of the humerus, yet nowhere is there any complete account of old dislocations of this bone and the various dangers attending efforts at reduction.

As a general fault it may be noted that the book too often mentions an array of cases gathered from various sources with little or no summary of the au-

thor's own conclusions. Whether this be due to want of care in editing or too great modesty on the author's part, it impairs the value of the work for reference. Those who especially desire to refer to the fullest and latest collection of statistics on this subject will nevertheless find it in Prof. Stimson's work, which is quite likely, therefore, to become a standard authority.

SECOND SERIES OF PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES. A complete work on Dermatology. An Atlas and Text-book combined. By GEO. H. FOX.

The first two parts of this work have already been noticed in THE JOURNAL. The standard of excellence is maintained fully in the third and fourth now at hand. We cannot speak too highly of the faithfulness of the illustrations. The coloring of these plates is much more correct and lifelike than of any similar collection seen by us. It must be remembered that this is not simply a new edition but an enlargement of the old edition, which makes it a complete text-book as well as atlas.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN, for the Use of Students and Practitioners. Second edition. Thoroughly Revised and Enlarged. By JAMES NEVINS HYDE, A.M., M.D. Pages 676. Philadelphia: Lea Bros. & Co.

We are much pleased to see a second edition of Dr. Hyde's well-known and most excellent book called for so soon. Changes have been made on almost every page, much has been rewritten and new chapters have been added. The nomenclature has been made to conform to that adopted by the American Dermatological Association. The illustrations are numerous. Those depicting morbid histology are accurate and well chosen. Two colored illustrations of unusually rare diseases have been introduced.

MISCELLANEOUS.

THE ROCKY MOUNTAIN MEDICAL ASSOCIATION held its seventeenth annual meeting in the parlor of the Burnett House, Cincinnati, on Wednesday evening, May 9, 1888. Dr. N. S. Davis was called to the chair in the absence of the President. The following members were in attendance: Drs. Davis, Toner, Wise, Donahue, Findlay, Atkinson, Elmer, Stanton, Hibberd, Pollock, Asdale and Morris. Honorary members: Mrs. Davis, Mrs. McMeans, Mrs. Hibberd and Mrs. Donahue. The proceedings of the last meeting and the memorial record were read by the Secretary. Two deaths were reported during the past year, viz.: Dr. D. W. Stormont, of Topeka, Kansas, and Dr. A. E. Heighway, of Cincinnati, both born in 1820.

Dr. William Elmer, of Bridgeton, New Jersey, was then elected President, and Dr. John Morris, of Baltimore, Secretary and Treasurer. On motion of Dr. Davis a resolution was passed requesting the Secretary to send a card to all the members, so as to secure accurate knowledge as to the number of survivors of the Association. The meeting adjourned to meet at Newport, June, 1889.

JOHN MORRIS, M.D.,
Secretary.

THE OMAHA MEDICAL CLUB, says the *Omaha Clinic*, is an association of physicians, and is of a most peculiar type. It is without any organization whatever, it has no officers, not even a chairman, and is governed without any rules. Any regular physician in good standing is entitled to admission to its meetings, and all such are cordially invited to be present and take part in the work of the club. There is no expense connected with it. The regular meetings of the club are held on the first and third Wednesday evenings of each month, at the office of the physician whose duty it is to read a paper. Every act of each person attending is purely voluntary. The utmost freedom of action prevails as regards work to be performed, the club being governed solely by the ru'es of polite society which prevails in the drawing-room. So far it has been a pronounced success, and the work very satisfactory, since only earnest workers and sincere students of medicine are in attendance.

THE WATER-SUPPLY OF GROWING CITIES is the subject for which a prize is offered for International competition in 1893. It is one of a series of annual prizes offered by the King of the Belgians, the value of which is 25,000 francs for each award. The essays of those desiring to compete must be addressed to the Minister of Agriculture, Brussels, before January 1, 1893.

NEW BOOKS RECEIVED.

Report of the Health Officer of the District of Columbia, 1887.

Physician's Leisure Library: Pleurisy and Pneumonia. By Garland.

The Infectious Diseases. By Karl Liebermeister. Translated by E. P. Hurd. Detroit: Geo. L. Davis.

A Manual of the Minor Gynecological Operations. By J. Halliday Croom, M.D. First American Edition, by L. S. McMurtry, M.D., A.M. Illustrated. 1888. Philadelphia: Ricords, McMullin & Co.

Intubation of the Larynx. By F. E. Waxham, M.D. Chicago: Charles Lucas.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S. ARMY, FROM MAY 12, 1888, TO MAY 18, 1888.

Par. 11, S. O. 104, A. G. O., May 5, is amended by par. 4, S. O. 108, A. G. O., May 10, 1888. Major Chas. R. Greenleaf, Surgeon, Major Robert M. O'Reilly, Surgeon, Capt. Jno. O. Skinner, Asst Surgeon, are detailed as a board of medical officers to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of the candidates for admission to the academy, and, in connection with the superintendent of the academy and commandant of cadets, the members of the graduating class.

Capt. D. M. Appel, Asst. Surgeon, will be relieved from duty at Ft. Davis upon the arrival of Capt. J. V. Lauderdale, Asst. Surgeon, and proceed to Ft. Hancock, and report to the commanding officer of that post for duty. S. O. 49, Dept. Texas, May 5, 1888, and S. O. 50, Dept. Texas, May 9, 1888.

First Lieut. Guy L. Edie, Asst. Surgeon, will proceed, not later than the 25th inst., to Ft. Concho, and report to commanding officer Eighth Cavalry for duty as medical officer, in compliance with par. 13, S. O. 99 c. s., Hdqrs. of the Army. S. O. 49, Dept. Texas, May 5, 1888, and S. O. 50, Dept. Tex., May 9, 1888.

First Lieut. F. T. Walker, Asst. Surgeon, will be relieved from duty at Ft. Ringgold, and proceed with Company D, Sixteenth Infantry, to San Antonio; he will then report for duty to commanding officer Post of San Antonio. S. O. 49, Dept. Texas, May 5, 1888.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING MAY 19, 1888.

Surgeon Edward Kershner, detached from U. S. S. "Pensacola," and wait orders.

Asst. Surgeon J. S. Sayre, detached from U. S. S. "Pensacola," and wait orders.

Surgeon W. H. Jones, detached from Navy Yard, League Island, and to "Pensacola."

Surgeon G. H. Cooke, ordered to the Navy Yard, League Island.

P. A. Surgeon Millard H. Crawford, ordered to the "Vandalia."

Asst. Surgeon F. W. F. Wieber, detached from "Vandalia" and ordered home.

Asst. Surgeon E. P. Stone, from Naval Hospital, New York, and to the "Pensacola."

P. A. Surgeon G. E. H. Harmon, commissioned a Surgeon May 12.